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Railway Age

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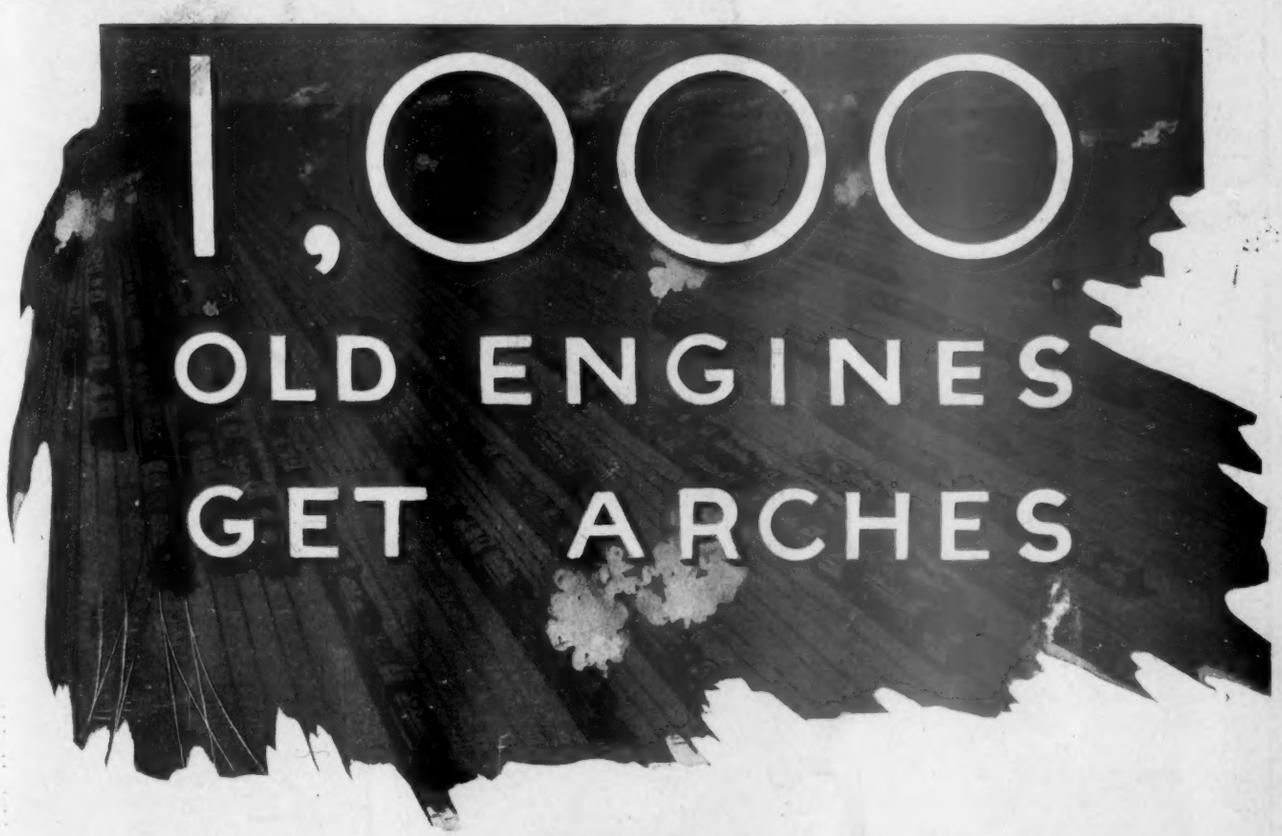

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EDITORIAL

Railway Age

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Are Railway Engineers Dogmatic?

It is a common criticism of the medical profession that it is dogmatic, that it will brook no departure from the conventional in the practice of its members. Are we sure that the engineer, and particularly the railway engineer, is not sometimes to be included in the same category? One evidence of this is to be found in the reluctance with which the various railroads have taken up and adopted the standard practices approved by the American Railway Engineering Association. Another illustration is to be found in the experience of the supply manufacturer who seeks suggestions for improving the design of his equipment only to be confronted with opinions so diametrically opposed to each other and advanced with such positive assurance as to afford little opportunity for the introduction of modification which will serve to reconcile them. Railway maintenance and construction officers are busy men and by far the larger portion of their time is occupied with administrative rather than engineering problems. The pressure on them for results is so severe that they can hardly be blamed for accepting something as good practice which they know from experience will *work*, although careful analysis might show that some other method would give better and more economical results. Technical training is intended first of all to give the student the scientific point of view to the end that he will not be satisfied that he possesses the truth until he has considered *all* the facts which are concerned in any problem. But, in the rush of his daily work, the mature engineer is inclined to lose sight of this fundamental principle. The engineer owes it to himself, as well as those with whom he deals, to consider each task which comes before him with an open mind. It matters little whether the problem comes to him in the form of a report from an assistant or a call from a supply salesman or any other source of information. Before he condemns or endorses any proposition he should be sure that his decision is founded on a thorough knowledge of the facts.

D. T. & I. Making Better Showing

By reason of a large increase in freight traffic and considerable reductions in expenditures for maintenance, Henry Ford's Detroit, Toledo & Ironton is making a much more favorable showing than it has in any previous year since Mr. Ford acquired this road. For the nine months ending with September 30 the road shows a net railway operating income of $1,506,950, which compares with only $5,650 in the corresponding period of last year. Operating revenues for the nine months' period were $7,860,952, an increase of $1,173,203 as compared with last year, and the operating expenses were $4,987,118, a decrease of $570,638. Expenditures for maintenance show a decrease of $780,893, while the transportation expenses naturally increased with the increase in traffic. In previous years the road has shown large net earnings for certain monthly periods, only to have them disappear before the year was over, and last year the road had some unusually heavy expenditures for maintenance, which has made it possible to get along with a much smaller expenditure for the purpose this year. Whether the large expenditures for maintenance last year included a large amount of deferred maintenance which, having been made good, render large expenditures no longer necessary, or whether the maintenance is being curtailed this year in order to make a better showing, does not appear in the figures themselves without further analysis of the condition of the road. But, whereas in the nine months' period of this year only 27½ per cent of the revenues were consumed in maintenance expenses, in the corresponding period of last year maintenance took 44 per cent of the revenues. The ratio of operating expenses to revenues in the nine months' period this year was 63.4 as compared with 83.1 last year. Even if the favorable showing should be continued throughout the year, however, there are considerable arrears in bond interest to be met before there will be anything available for a dividend.

Potter May Leave I. C. C.

The term of Mark W. Potter as an Interstate Commerce Commissioner expires in December of this year. It is understood by some of his friends that he will not accept renomination. He accepted the position on the commission and has retained it at a great personal sacrifice and feels that he should be relieved. If Mr. Potter leaves the commission the public will suffer a heavy loss. He is the one man on the commission who has had a practical training in railway operation and administration. He has been a strong constructive force on the commission and his reports have been made without bias or prejudice in favor of the railroads, but in the interests of the public at large. He has probably decided against the individual interests of the railroads as many times as he has decided for them. When his opinion differed from the majority of the commission and he has written minority reports, they have been noted for the facts which they contained and the logic in which they were presented. The commission needs in its membership a trained railway officer, who has a thorough understanding of operating conditions, and who can develop the real facts in a situation and approach questions in a constructive, broad-minded manner without prejudice. The government has been exceedingly fortunate in having the services of a man of Mr. Potter's caliber and it is greatly to be hoped that he will remain on the commission.

The Railway Congress in London

On another page in this issue appears a list of the subjects to be discussed at the next session of the International Railway Congress to be held in London in 1925. The British railways are to be the hosts of the congress and a committee of prominent English railway officers has been appointed to make the necessary arrangements. Our London contemporary, the Railway Gazette, points out that the time and place for the next session of the congress is peculiarly appropriate, since England is the birthplace of the railway and 1925 is the centennial of the railway there. At the last session of the congress, which was held in Rome last year, English and American delegates failed to get the most benefit from the

discussions because of their being conducted to such a great extent in French and Italian. At the London session, English will doubtless be used to a much greater extent. The program and the names of the reporters give every reason for the assumption that the session will be well worth while. This fact, together with the relative proximity of London as compared with other European cities and the minimizing of the difficulties due to differences in language, should insure the attendance of a considerable number of railway men from this continent.

Public Opinion and Railway Regulation

ONE OF THE MOST DIFFICULT and important problems with which the managements of the railways are confronted is that of forming an intelligent, fair and constructive public opinion regarding railway regulation. The railways have made more and greater efforts to form such a public opinion within the last three years, and especially within the last year, than ever before. These efforts undoubtedly have resulted in an improvement. Many railway officers are likely, however, to consider the improvement made as small in proportion to the efforts that have been put forth.

Most persons who were demanding reductions of freight rates on farm products two years ago are still demanding them, although rates on farm products and all other commodities have been reduced since then; the prices of farm products have increased and facts showing why rates should not be further reduced have been presented over and over again. Most of those who were denouncing the Transportation Act on the theory that it "guaranteed" the railways "excessive" profits are still denouncing it, and demanding its repeal, although it has been shown over and over again that the act does not "guarantee" the railways anything, and that they have earned much smaller net returns since it was passed than they did before.

One thing that every man who really studies public opinion soon learns is that often it is not what it seems. It is commonly assumed that the utterances of public men express public opinion. It often happens, however, that public opinion undergoes changes while the utterances of public men continue unchanged. The election of a number of radicals to Congress from western states a year ago undoubtedly indicated the sentiment prevailing in those states at that time regarding railway matters. The men elected were of a well known type and hold certain views which most of them will continue to express as long as they are in Congress. But because they continue to say that the western farmers are being ruined mainly by high freight rates and that the remedy is to reduce the valuation of the railways does not show that they are still expressing the public sentiment of their states. On the contrary, there is much evidence that many farmers as well as business men in western states have become convinced that the troubles of the farmers are due only in part to railway rates and in much greater measure to other causes, such as high prices of the commodities they buy, high cost of labor, high taxes and heavy mortgage indebtedness. This change in sentiment will not be voiced by men such as Senator Brookhart, but it will have its effect on other public men who did not win their way into office solely by denunciations of the railroads and Wall Street.

Not only is public opinion not always what it seems, but it changes slowly. Professor A. V. Dicey in his book entitled, "Law and Public Opinion in England During the Nineteenth Century" shows that the public opinion which dictated legislation almost always was in process of formation for years before the legislation was passed, and that often when legislation was passed there was being formed the very public opinion which not many years afterward caused it to be changed.

This is what has been happening to the railways of the United States. The formation of the public opinion which caused the Elkins, the Hepburn, and the Mann-Elkins rate regulations acts to be passed often has been attributed principally to the messages and speeches of President Roosevelt. This is a mistake. The public opinion which caused the adoption of this legislation was in process of formation for years before. It was created by lobbying, by rebating, by financial manipulation and other evil practices of the railways, and by the attacks which these practices caused to be made upon them. President Roosevelt simply gave utterance to this public sentiment when it was almost fully developed and ready to cause legislation.

It is often said that public sentiment against government ownership was created by the results of government operation during the war. This is only partially true. For years previously government ownership had been the subject of widespread discussion. For eleven years before government operation was adopted the railways had been subject to effective regulation. The practices of legislative lobbying, of unfair discrimination, and of financial manipulation had been abolished. The management of the railways had been improved, and efficiency of operation reached its height in 1917. Hearings in rate cases and labor arbitrations, and arguments pro and con regarding the issues involved in them, as well as regarding private versus government operation—these and other developments had made the public feel more friendly toward the railways in 1917 than at any time in years before. The unsatisfactory results of government operation merely crystallized the public sentiment friendly to private management which already was largely formed.

What we call "public opinion" is never the opinion of all the public. It is merely the opinion of a majority of the public. Most men never change their views much about anything after they are forty years old. If a very large majority of the people once form a certain opinion, that opinion is likely to be "public sentiment" concerning the matter to which it relates for a long time. This largely explains the particular character of the railroad problem of today. For many years the charge was constantly iterated and reiterated that the railways were grossly "over-capitalized." Until within comparatively recent years no great effort was made to refute it and convince the public of the opposite. Most people, therefore, accepted the charge as true. Consequently, when the Interstate Commerce Commission placed upon the railways a tentative valuation exceeding their net capitalization many people had a natural tendency to think the valuation was excessive. When rates were maintained in 1921 after all prices had fallen, and it was charged they were kept high because the valuation was excessive, the assertion naturally found many receptive ears. The present struggle over railway rates is really a struggle over the valuation of the railways and the net return they shall be allowed to earn on it. Many people believe the valuation is excessive because it is larger than the capitalization, and because they already believed the capitalization was excessive. Most of them believe the capitalization is excessive because they were told so years ago and never heard anybody deny it. Therefore, the threat of adverse legislation with which the railways are now confronted is largely the result of a public opinion respecting their capitalization which was formed years ago.

The lesson is plain enough. The public opinion of today regarding railway matters would be very different if the railways years ago had made proper efforts to set the public right regarding such questions as that of "over-capitalization." As the public sentiment of today was made in the past, so the public sentiment of next year and ten years hence is being made now. It is being made by the way in which the

railways are being managed. It is being made by the way their officers and employees treat the public. It is being made in very large measure by what the railways are doing at present to acquaint the public with the facts about their business.

The railway managers of past generations are largely responsible for the problems with which their successors are struggling now. The railway managers of the present generation are determining the problems and the public opinion with which those of the next generation will have to deal. Railway officers who expect to be the executives of the future may well take these facts to heart. The work of educating public opinion must be done right now if they are to manage prosperous and successful railways in future.

How One Union Paper Misinforms Its Readers

THE OCTOBER ISSUE of the Train Dispatcher, the official publication of the American Train Dispatchers' Association, contains two eloquent examples of the kind of misrepresentation which the editors of some of the union publications are constantly putting before their readers.

The first of these begins with a fragmentary quotation from the *Railway Age* saying that in the first seven months of 1923 the Canadian National Railways earned a net operating revenue of $2,984,460 as against a deficit $2,202,993 for the same period last year—an improvement of $5,187,453. In commenting on this the Train Dispatcher says:

> This seems clear evidence of the superiority of government conducted railways as compared with private operation. Under private operation the railroads of Canada, the Canadian Pacific excepted, were steadily going from bad to worse. In the very first year of operation by the government—directly (sic) by experienced men, of course—the carriers showed a profit. This net profit is comparatively small when the fixed charges are taken into consideration but it was private owners who over-extended the railways and brought about the heavy overhead expenses. . . .

There has been a great deal of misunderstanding and a lot of deliberate misrepresentation of the railway situation in Canada but this is about the worst example of either which we have yet seen. What are the facts? In the first place, the Canadian National Railways were owned by the government in 1922, the same as in 1923, so the comparison which the Train Dispatcher makes is between two years of government ownership and not between a period of private ownership and a period of government ownership. It is true that 1923 is the first year of unification of all the Canadian government lines under one management and that this unification has doubtless effected some economies. The unification of a number of poverty-stricken railway lines, some of them competing with each other, would doubtless make possible some savings regardless of whether the railways were owned by the government or by private companies. Then, too, of course, more traffic is moving this year than last. The point to bear in mind, however, is that in comparing the results of operation of the first seven months in 1923 with the same period last year, *we are comparing one form of organization under government ownership with another form under the same ownership, and not government ownership with private ownership.*

The Train Dispatcher says that the C. N. R. is showing a "profit," although it reluctantly admits that when fixed charges are considered this "profit" is comparatively small. The editor of the Train Dispatcher evidently does not know exactly what net operating revenue is—or perhaps he just does not want his readers to know. As a matter of fact, net operating revenue does not include even interest on bonds—to say nothing of profit. The "profit" which the Train Dispatcher speaks of will resolve itself into a deficit of about $50,000,000 for the year after interest is paid on the bonds.

As for the over-extension of railways which the Train Dispatcher blames on the private owners of the lines now forming the C. N. R., this over-extension could not have gone very far unless the Canadian government had aided it with subsidies and encouraged it in various other ways. Most of the railway mileage which now weighs most heavily on the finances of the Canadian National would never have been built as a straight business proposition. Wisely or unwisely, it was built with the aid of the government for political reasons or for the purpose of developing the country. One of the lines was built and operated by the government from the very start as one of the conditions stipulated by the Maritime provinces before their entrance into the Canadian federation.

If a nation wants thousands of miles of railways which cannot be supported by the traffic offered to them and chooses to secure these railways by providing subsidies and loans in one form or another to private builders—if even this assistance from the government is not enough to make up to the private companies the losses they sustain because little or no traffic develops on the lines they build—if in spite of all this, the government still desires to keep these lines in operation—then there is no alternative but government ownership, to which Canada has turned as a last resort. This is not a railroad problem as we understand it in this country; it is a problem of national development. The Canadian government was less interested in railway development on sound commercial lines and in the highest efficiency of operation than it was in throwing open the country to settlement.

Naturally, after having the railroads virtually forced upon it as the result of its policy of extension, the government has made an effort to secure as great a degree of efficiency as possible under the circumstances. To do this it very wisely did not appoint as director-general a politician whose main interest lay in securing the labor vote. Instead it called upon a railway executive of broad experience, who received his training and rose to high office on the Pennsylvania. Supporting this executive, who was appointed president and chairman, was appointed a board of directors representing the Dominion economically and territorially. In other words, the present administration of the Canadian National is made to simulate that of a private company insofar as is possible and officers of those lines would probably be glad to tell the editor of the Train Dispatcher that whatever success they may have in making the C. N. R. a better government owned line than those in other parts of the world depends largely on the extent to which the politicians and the people will permit them to operate the property as they would a private undertaking.

As a matter of fact, the politicians have not refrained from interfering with the management of the Canadian National and on a number of occasions have set up a great outcry at simple administrative acts of the C. N. R. management in the attempt to make political capital of managerial decisions which in a private company would have gone unquestioned. Fortunately for the Canadian taxpayers, however, the politicians have in the president of the C. N. R. a powerful man to deal with and one who knows the railroad business—not, according to the precedent set in this country under federal control, a politician, himself seeking political promotion. This will tend to reduce the interference with the railways which would certainly be overwhelming under any other circumstances. Nevertheless, that the C. N. R. management is not to have the same freedom as a private company has already been made evident.

The advocates of government ownership in this country cannot sincerely derive any analogy from the Canadian situation which will give them any argument for government

ownership here. The Canadian government did not make any attempt to take over the Canadian Pacific, a privately owned line which had been developed on sound commercial lines. Instead it took over only such lines as it found in the most serious financial straits. We have never heard the vociferous advocates of government ownership in this country ask that the government take over only such lines as frequently do not earn operating expenses and which always fail by millions to meet fixed charges. Until they can temper their demands for government ownership, therefore, to exclude all roads which with fair rates are able to earn at least their fixed charges, they will do well not to try to draw analogies from Canada.

But the Train Dispatcher has not restricted its anti-railroad campaign to this one editorial. In addition, it has another called "Concealing Excess Rail Profits," in which it calls attention to the heavy expenditures which have been made for maintenance during 1923, and says that "Wall street is busy taking profits out of its railroad pocket and putting them into its equipment pocket."

Now we think that most of the readers of the Train Dispatcher know, whether the editor does or not, that equipment conditions were very bad at the beginning of the year and also that the country was apparently entering a period of prosperity which would bring heavy traffic, the handling of which would make necessary the utilization of every resource at the command of the railways. Their action, therefore, in spending enough for maintenance to bring the percentage of bad order cars down from 9.5 at the beginning of the year to 6.7 on October 1, and of unserviceable locomotives from 21.1 per cent down to 13.7 per cent in the same period merits thanks rather than blame from everybody, employees included.

The dispatchers form one of the most intelligent classes of railroad men. Their work is of a character to give them a broader outlook on the operation of the railroad as a whole than that of most other occupations in the railroad business. We cannot, therefore, understand why the official magazine of the association which is supposed to represent them should be as bad in its misinterpretation of the railway problem as some periodicals published by unions of employees whose work gives them no such opportunities for acquiring a broad knowledge of railway operation. In the final analysis, the members of labor unions can determine the sort of material which the union publications shall publish. It is a strange thing to see men voluntarily tax themselves to support a paper which deliberately sets about to misinform them.

Why Should the Employees Favor Government Ownership?

MOST OF THE RAILWAY LABOR LEADERS are in favor of government ownership of railways. Many railway employees also are in favor of government ownership—nobody knows just how large a part of them. The employees who favor government ownership do so mainly because they believe they would be paid higher wages under that policy. They believe this principally because wages were advanced under government control in 1918 and 1919, and have been reduced within the last two years under private operation. A very important fact that many of them apparently forget is that the largest single advance ever made was awarded by the Railroad Labor Board in 1920 and put into effect by the railways under private operation.

That the belief of many employees that they would be better paid under government than under private operation probably is a hallucination is indicated by the following facts. Prior to the war the wages paid to railway employees in this country were higher than those paid in any country in the world under government ownership. In this country the wages of railway employees are, and always have been, higher than those of government employees. A study of the number and wages of all the government employees in the United States—local, state and federal—which recently was made and published by the National Industrial Conference Board showed that the average wage of these employees is $1,296 a year. The average wage of the railway employees of this country is now $1,643 a year, or almost 27 per cent more than that of government employees.

Finally, contrary to a belief which seems to exist widely among railway employees, they have been paid higher wages in every year since the railways were returned to private operation than they were under government operation. In 1918 their average wage was $1,419, and in 1919, $1,485. These were the two years throughout which the railways were operated by the government. In 1920 the average wage of railway employees was $1,820; in 1921, $1,665; in 1922, $1,630; and in 1923, as already stated, it is $1,643.

Whether the wages being paid to railway employees are too high or too low is a matter of opinion. To the employee who has to meet the cost of living in a large industrial center they may seem too low. To the farmer, who is receiving a price for his wheat not much higher than before the war, they may seem too high. At any rate they are higher than any wages ever paid by the government of this or any other country to any class of employees, railroad or otherwise.

There is no mystery, however, about the reason why many railroad employees, in spite of these facts, favor government ownership. They follow the officers of their labor unions, without looking up facts or thinking for themselves, and many of the leaders of their labor unions constantly misrepresent the facts to them.

Whence Does the Citizen Learn About Railroads?

"THE BEST SOLUTION of the national railroad problem can be reached only by a candid statement of the facts as they exist. * * * Efficient service in transportation can be obtained only by intrusting the task to honest men having a practical and scientific knowledge of the question." These words are from the introductory portion of an address delivered before the Norfolk (Va.) Chamber of Commerce on October 29 by James C. Davis, director general of railroads; a strong address, lucid and convincing, which limitations of space forbid reprinting in these columns. Aside from its substance—arguments with which readers of the *Railway Age* are measurably familiar—a question at once suggested by the perusal of the address is, Who is the speaker?

He is a representative of the federal government. Is he a partisan of the money power, of which many congressmen profess to have a great fear? He is not. He holds the same position that was held by William G. McAdoo for two years, and is a "friend of the people" as definitely as was the war-time director. Why does Mr. Davis find it necessary to stress such simple, self-evident propositions as those we have quoted? Well, for one reason, because candid statements are obscured by so many that are uncandid, especially in Congress. The feeling among congressmen that railroad managements are not honest sometimes seems to be the ruling sentiment in that body. This suggests the question that we have proposed: Who is speaking? Every congressman is in duty bound to listen to Mr. Davis; as much so as to listen to the secretary of the treasury on financial matters, or the secretary of the navy in his department. Mr. Davis calls for a fair trial of the existing Transportation Act, and

expresses his views very definitely. Every friend of his in Congress has a duty to see that those views are properly presented in that body; a duty to challenge every member who disagrees with him. The need of candid statements of fact is particularly pressing in the House of Representatives.

From a recent court decision reported from South Carolina, it would appear that fair views on the railroad problem may need to be preached in the courts as well as in Congress; that is to say, in the higher courts, by way of education of the judges in the lower courts.*

A recent statement headed "The Railroad Crisis," by E. M. Herr, president of the Westinghouse Electric & Manufacturing Company, also suggests the question, Who is speaking? Mr. Herr's views are substantially in line with Mr. Davis'. Our present throttling processes, he says, will, if not changed, cause a slowing down of industry and an increase in unemployment; and prosperity will disappear. Mr. Herr represents a business which sells goods both for domestic and foreign consumption. He sells to railroads; but he sells also to widely varied interests. Can any advocate of lower freight rates impugn either his motives or his logic; his facts or his principles?

Our discussions of public questions are now so very generally carried on at arms' length that interrogatories like those here suggested are much needed to clarify the issues. A debate on a complicated subject, when conducted through the newspapers, rarely gets anywhere unless more fully reported than is usual. A newspaper, printing either Mr. Davis' or Mr. Herr's address, should do all in its power to bring out both approving and opposing views; and an important part of the editorial duty, in so doing, would be to make prominent the question proposed at the beginning of this article, Who is speaking? An address delivered in Norfolk may be the best means of conveying certain instructive information to multitudes of inquiring citizens in a hundred cities; and the newspapers are the only available means of doing this. The more leisurely reviews may prove to be too slow. And, as suggested, the newspaper, to do its full duty, must give very definite and accurate information concerning the personality, the powers and the influence of men whose ideas they give to their readers. National questions are now discussed in print so voluminously that the reader must make a selection; he cannot read and assimilate all of the arguments which are urged upon him; and the first essential is to be fully advised, by someone whom he trusts, as to the soundness of every writer's character, his standing and his relation (in this matter) to the government and to the railroads.

Senator Capper, of Kansas, has just issued a statement of what he thinks Congress ought to do at the coming session; and the first item is, reduce freight rates. His eleven points, by the way, are covered in 25 lines, an example of conciseness and brevity which is well worthy of the attention of everyone who would reach the present-day newspaper reader. Senator Capper's views are so generally known that it may be thought that our rule, here proposed, is not needed; that his personality and the degree of authority possessed by his views need no explanation. But that does not necessarily follow. Conservative economists believe that Senator Capper is so strenuous in his political love for the wheat-raiser that he is little disposed to consider the real reasons for present rates; but that does not settle the case. It is desirable that all readers, every time they open their minds to the senator's arguments, put before their minds a complete picture of the man. So of Mr. Herr. So of the director general of railroads. So of every leader. Personality often constitutes the final justification of a man's logic.

*In a case recently reported, a suit against the Atlantic Coast Line, the Supreme Court of South Carolina holds that in an action against a railroad in which a question of interstate journey was involved, that instructions from the bench, in the lower court, from which the jury might infer that the railroads and Congress are in collusion to protect the railroads from the consequences of their unlawful invasions of the rights of the traveling public, are prejudicial error, requiring reversal.

New Books

Traffic Management. By A. T. Patek. 425 pages, 6 in. x 9 in. Cloth. Commercial Text Book Company, St. Louis, Mo.

The title of this book should be *freight* traffic management, as that is the subject, as indicated on the title page; and the passenger department is not dealt with. It is dedicated to the "freight traffic student," meaning apparently, the shipper-student, not the railroad man. The author is connected with the general freight office of the St. Louis-San Francisco, at St. Louis, and evidently has made a very thorough study of the work of that department. The matter in the book is well arranged, as will be seen by the chapter headings, quoted below, and the author is a careful writer; but he has presented such a ponderous mass of detail and has clothed his thoughts in such stilted language that it is questionable whether one in a hundred of the young men who might buy the book as freight traffic students would have the patience to wade through, and comprehensively read, these 400 pages. And it is proposed to issue two more volumes, this one being designed to deal only with fundamentals. On almost any page, the reader comes across long sentences in which the words actually obscure the thoughts.

The preface starts off with the statement that the contents of the volume "reflect the application of administrative measures." It is argued that there is a field for the book because "commonly accepted is the opinion that the relative value of freight traffic management has steadily waxed with the enactment of statutory provisions manifesting an economic function of mutual interest" to railroads and industrial plants. "Attended by actual experiences, the formulation of the text adheres to the principle of imparting such information as would seem most advantageous to the lay mind in assimilating the essence of fundamental and practical detail."

The author has written the book himself, has had long experience, and has studied his business; but his choice of language with which to tell this to the reader is the following (in closing the preface):

"The reward of purely individual effort, this text is cited as an exemplification of impressions gleaned in years of service, study and observation in this particular field of mental endeavor."

On a page where the running headline is "Practical Talk" we read that "The functions of traffic are administered through the efforts of the traffic executive whose requisites contemplate a workable knowledge of freight rate and tariff practices," which term "is liberally applied to the elements of this work and may imply in substance a familiarity with contributing units . . .

"Freight rate structures, rules and regulations, as a whole, it will be borne in mind, are predicated upon the fundamentals of federal law and the injection of state regulatory measures, while all shipping transactions as represented by the execution of bills of lading are also subjected to the purview of common law practices because of the elements of liability attending the temporary possession of goods proffered to the carriers for transportation."

Horizontal advances or reductions in rates increase complexity "because long established relationships are ordinarily distorted in the wake of horizontal rate accomplishments."

The arrangement of the material in the book will be understood in a general way from the following list of the chapter headings: Development of Traffic Ability; General Observations; Interstate Traffic Regulation; Rate Regulatory Provisions; The Bill of Lading; Limitation of Carriers' Liability; Uniformity in Shipping Contract; Contract Terms and Conditions; Rate Making Foundations; Classifications, Rules and Uses; Consolidated Freight Classification; Payment of Freight Charges; Weighing and Inspection of Freight; Transportation of Explosives; Car Service Rules

and Interpretations; Per Diem Rules and Interpretations; Elements of Competition; Rate-Making Associations; Chronology.

These chapter headings are followed, in the contents page, each by from 15 to 30 or more subtitles. Probably the most useful portion of the work is that which deals with regulation by the federal government, the author's study of the Interstate Commerce Law and of the decisions of the Interstate Commerce Commission having evidently been very careful and thorough.

Kent's Mechanical Engineer Handbook. Robert P. Kent, editor-in-chief. Tenth edition; 2,247 pages, 4¼ in. by 7 in., illustrated. Bound in morocco. Published by John Wiley & Sons., Inc., New York.

Kent's handbook needs no introduction to the mechanical engineering public. Since the first edition was published in 1895 and throughout the succeeding eight editions, it has been widely used as a practical reference book of engineering data. These editions, however, have largely been revisions of the material in the first edition, with the addition of new material from time to time as the scope of the mechanical engineering field changed and broadened, and the result has been the gradual development of a lack of balance in the material in the book. Some divisions of the science, which 28 years ago held first rank, are now of relatively minor importance, while other divisions have taken their place. To correct this condition, in the present edition the book has been completely rewritten by a large corps of contributors, each chosen for his fitness to select the material for one of the sections. The editor-in-chief, who is the son of the original founder, has followed the latter's fundamental idea that the book be kept one of engineering practice rather than engineering theory. Among the new subjects appearing for the first time in this edition are Aeronautics, Automobiles, Heat Insulation, Reinforced Concrete, Safety Engineering and Machine Design. Many other sections have been rewritten so that they are practically new. The tenth edition contains over 50 per cent more matter than the previous edition, and has been carefully edited to insure the greatest practical convenience to the user.

Engineering Economics.—By J. C. L. Fish, professor of railroad engineering, Leland Stanford University. 312 pages, 6 in. by 9 in., tables and charts. Bound in cloth. Published by the McGraw-Hill Book Company, New York.

While this is the second edition of Engineering Economics, it is in reality an almost entirely new book as the development of the subject has been changed. The text of this edition has been developed from the basic supposition that the fundamental problem of engineering economics was choice of investment and not choice of structure. The subject matter covers the analysis of the investment problem and the discussion of such data as influence the choice of investment in considerable detail, as well as other related subjects such as financial statements, cost keeping, valuation, engineering reports, corporation papers, etc.

Southern Pine Manual.—186 pages, 4½ in. by 6¾ in., illustrated. Bound in imitation leather. Published by the Southern Pine Association, New Orleans, La. Price $1.50.

This is essentially a handbook on standard wood construction and forms the ninth edition published by the association. The subject matter of the eighth edition has been retained to a considerable extent; some additional matter has been included and some data excluded. The additional data cover the latest requirements for floor and roof loads for the largest cities in the country; new material on wood block floor paving and construction; details for design of light wood roof trusses on spans up to 125 ft.; timber working stresses and design factors based on recent comprehensive tests of commercial southern pine; and safe working loads for bolted, nailed and spiked connections. The excluded parts pertain to the legal safe working stresses adopted and changed from time to time by the various municipalities throughout the country. The book is compiled primarily for the use of architects, engineers, contractors, builders and other interested in wood construction and design.

Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

The Amazing Story of Henry Ford, by James Martin Miller. Chapter 12, "Henry Ford and His Railroads," and Chapter 13, "Railroading Is Not a Mystery." 400 p. Published by M. A. Donohue & Co., Chicago.

My Life and Work, by Henry Ford in collaboration with Samuel Crowther. Chapter 16, "The Railroads." 289 p. Published by Doubleday, Page & Co., Garden City, New York City.

The Rights of Railroads, by J. A. H. Hopkins. Questions and answers criticizing railroad management and arguing for government ownership. 16 p. Published by National Bureau of Information and Education, New York City.

Steam and Electric Railroad Cars and Railroad Repair Shops, compiled by U. S. Bureau of the Census. From the Census of Manufacturers, 1921. 26 p. Published by Government Printing Office, Washington, D. C.

Transportation, prepared under the direction of Grover G. Huebner. Vol. 15 of modern business textbooks of the Alexander Hamilton Institute. 314 p. Published by Alexander Hamilton Institute, New York City.

Periodical Articles

The Business Outlook. I. Transportation. II. Finance. III. Employment. IV. Basic Commodities. Annalist, October 29, 1923, p. 566-574.

Can't We Carry Freight to Your Door? by W. J. L. Banham. Store-door delivery for l.c.l. freight. Nation's Business, November, 1923, p. 15-18.

New Security Issues Under the Transportation Act. "Since the government returned the operation of the railroads to their owners on March 1, 1920, investors have bought new railroad securities aggregating $1,700,000,000." p. 21. Commerce Monthly, November, 1923, p. 21-23.

Package Car Service Between Chicago and Mexico City. Route of service recently inaugurated. Commerce Reports, November 5, 1923, p. 378.

The Railroads—Ten Years from Now. Problems confronting the U. S. Chamber of Commerce's coming national transport conference. Nation's Business, November, 1923, p. 38-40

The Water, Coal and Man Power of the Western Slope of the Southern Applachian Mountains, by J. A. Switzer and W. R. Woolrich. Rail and power facilities for large steam plants, p. 640-641. Mechanical Engineering, November, 1923, p. 637-642.

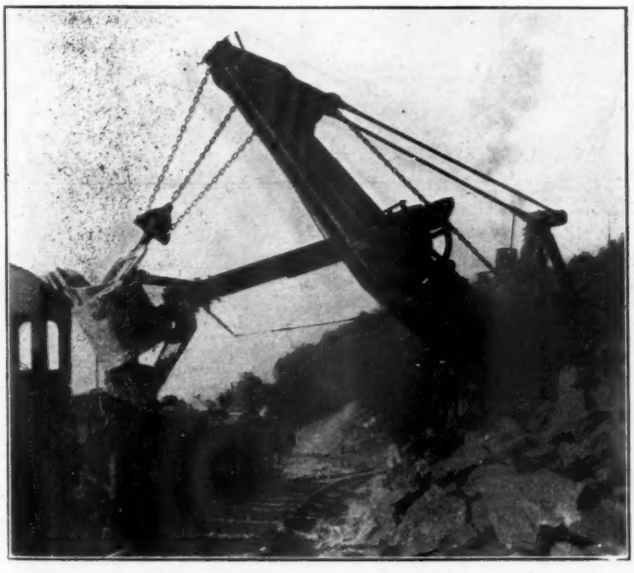
We Laymen and Our Railroads, by Howard D. Dozier. Railroad attempt to enlighten public opinion as to fundamentals of the "railroad problem"—what it has been and what it should be. South Atlantic Quarterly, October, 1923, p. 304-316.

Tracks were laid with Company Forces

Southern Pacific Builds More Second Track

This System Completes Part of Large Improvement Program for Overland and San Joaquin Routes

THE SOUTHERN PACIFIC, Pacific System, has recently authorized the construction of 28.7 miles of second track at the summit of the Sierra Nevada mountains at a cost of $12,000,000. This work will supplement second tracking for a distance of 12.8 miles on the east and west approaches to this summit and for 28.9 miles in eastern Nevada, which was recently completed. This improvement work on the Overland route, together with 30.9 miles of second track work in the Tehachapi mountains on the San Joaquin Valley route, represents an expenditure of $4,000,000, which, together with the $12,000,000 project recently authorized, comprise important features of the general program for the improvements on the Southern Pacific aggregating $50,000,000. The double tracking recently carried out on the overland route was in four sections, as tabulated below:



Ninety-five-ton Shovel Reaches Across Main Track to Load Construction Cars

San Francisco-Ogden:	Distance in miles
Blue Canon to Emigrant Gap	5.3
Andover to Truckee	6.5
Wells to Mcor	8.7
Valley Pass to Montello	20.2

The double tracking on the San Joaquin Valley route was in two sections as follows:

	Distance in miles
San Francisco-Los Angeles (San Joaquin Valley Route):	
Bakersfield to Sivert	11.6
Tehachapi to Mcjave	19.3

San Francisco to Ogden

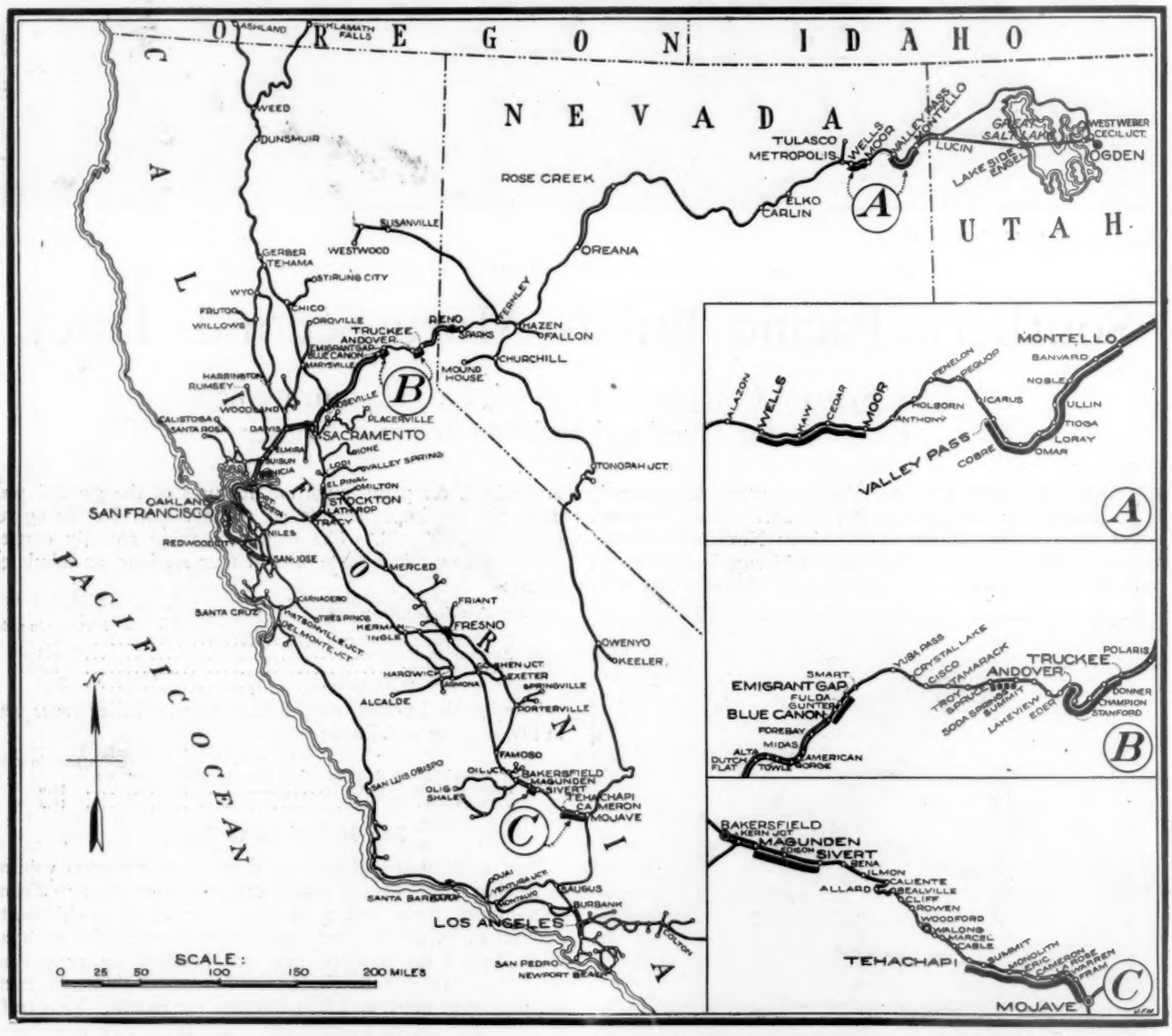
During the fall and summer months an enormous volume of Pacific coast crops is moved eastward over the San Francisco-Ogden route, and a large portion of these shipments consists of perishable and competitive commodities such as fruits and farm produce that are handled on prescribed schedules. During the heavy traffic season this movement amounts to as much as 2,000,000 tons per month. This traffic not only imposes extremely exacting service conditions over the mountains but also across the hot deserts of Nevada and Utah for a distance of about 800 miles, both as regards the expeditious movement of the perishable freight eastbound and the rapid return of the empty refrigerator cars in the reverse direction.

The volume of shipments is increasing rapidly, and in order to meet the needs of the traffic as quickly as possible efforts have been made to increase the facilities at those points on the line where the traffic is especially restricted by the physical conditions. To this end the double track was built first on the west and east approaches to the summit of the Sierra Nevada mountains from Blue Canon to Emigrant Gap, and from Andover to Truckee, respectively, while the second

track work recently authorized at a cost of $12,000,000 will carry the second track over the summit between the sections of double track recently completed. The completion of this latest project will afford double track operation for the Southern Pacific all the way from San Francisco to Sparks, Nev., a distance of 242 miles.

The recently authorized work is much heavier than that in the same vicinity which has just been completed. It calls for a change of line at the summit of the mountains, which, together with a two-mile tunnel, will be effective in lowering the summit elevation by 135 ft. This new line and tunnel also the building of 65-car center passing tracks at Blue Canon and Emigrant Gap and the extension of the siding at Andover for a length of 733 ft. It also involved the construction of a new 80-ft. turntable at Emigrant Gap and the removal of 6,883 ft. of single-track snow sheds and the erection of new snow sheds to accommodate double track.

With the exception of 24,000 cu. yd. of rock and earth excavation which involved train haul that was handled by company forces with a 95-ton steam shovel, having a five cubic yard bucket, the grading was all done under contract. The Erickson-Petterson-Grier Company was awarded the



Part of the Southern Pacific System with the Second Track Projects Indicated by Heavy Lines

will be built for the single track and will be used for eastward traffic, retaining the old line for the westward movement. Other features of this project include three steel viaducts approximately 400 ft. in length and several tunnels to be built parallel to those on the existing line.

Second Track Work in the Sierras

The two completed sections of second track work in the Sierra Nevada mountains cover 5.3 miles and 6.5 miles, respectively, and involved a total of about 300,000 cu. yd. of earth and rock excavation, principally the latter. In addition to the construction of second track, the work included contract for the grading between Blue Canon and Emigrant Gap with the exception of the company work stated above, while the Utah Construction Company handled all of the grading in the section between Andover and Truckee. The construction of all culvert extensions, all track work and the signal installation was handled by company forces. Owing to the fact that the work was started early in the spring the presence of snow interfered to a considerable extent with the early progress. This was particularly the case with the wrecking of the old snow sheds and the construction of the culverts.

Every effort was made to push the work as rapidly as

possible in order that the additional trackage could be placed in service at the earliest possible date. As a consequence, a larger amount of equipment was used in the grading than is ordinarily provided for work of such limited compass. The following table shows the grading equipment provided in the section between Blue Canon and Emigrant Gap, all of this being contractor's equipment with the exception of the 95-ton shovel at the head of the list. The work in this section was started on March 6 and the final section of the second track was completed on August 15. The portion between Andover and Truckee was started on April 10 and entirely completed on August 5, the contractor on this portion using four steam shovels with narrow gage locomotives and four yard dump cars in addition to 100 head of stock for the making of fills from adjacent borrow pits, with scrapers.

STATEMENT OF EQUIPMENT PERFORMANCE ON 5.3 MILES OF SECOND TRACK BETWEEN BLUE CANON AND EMIGRANT GAP

Equipment and power	Bucket capacity	Days	Yardage handled	Haul	Classification of material
95-ton steam shovel—oil.	5 yd.	40	32,000	Train haul	Rock and earth.
Gasoline shovel	¾ yd.	70	25,000	.....	90 per cent rock and 10 per cent earth.
45-ton steam shovel—oil.	2 yd.	79	22,000	1,200′	40 per cent rock and 60 per cent earth.
65-ton steam shovel—oil.	2½ yd.	109	18,000	700′	Hard volcanic ash requiring large amount of drilling and shooting.
65-ton steam shovel—oil.	2½ yd.	77	27,000	2,000′	Hard cement gravel and large boulders. Very difficult to drill and too hard to dig without shooting.
Steam shovel—coal	¾ yd.	124	35,000	600′	30 per cent rock, balance earth and shale.
Steam shovel—coal	¾ yd.	90	17,000	.....	30 per cent rock, balance earth and shale.
60 mules and horses....	.....	95	21,000	400′	Earth and shale.
10 mules and horses...	.....	74	5,000	400′	Earth and shale.

Snow and rains and the necessity for special precautions to avoid obstructions with traffic introduced no little interference with the progress in the work. A limited supply of water was another obstacle, and in the section between Blue Canon and Emigrant Gap it was finally necessary to haul water to the various shovels and make temporary connections to the railroad's fire train maintained at Emigrant Gap to protect snow sheds.

In order that the maximum possible utilization could be made of the additional trackage at the earliest possible date special pains were taken to complete the work in sections that could be turned over to the operating department rather than to wait for the completion of the entire project.

The new track was laid with 90-lb. A. R. A. rail and ballasted with crushed gravel hauled in regular trains from Fair Oaks, a distance of about 93 miles. Another feature of the work was the installation of automatic block light signals in place of the staff system in use on the single track. The signals are operated by batteries in the section from Blue Canon to Emigrant Gap and from a high-power electric transmission line between Andover and Truckee, the construction of this transmission line being an important feature of the work.

Double Track in Eastern Nevada

The main line from Reno, Nev., to Ogden, Utah, a distance of 535.5 miles, is a single track with the exception of small stretches of double track built to facilitate movement at terminals, as follows:

Reno to Sparks	7.4 miles
Oreana to Rose Creek	48.8 miles
Montello to Lucin	17.9 miles
Lakeside to Engle	6.5 miles
West Weber to Ogden	6.8 miles
Total double track	87.4 miles

The ruling grade between Reno and Ogden is 0.4 per cent against eastbound traffic, but at two points this traffic is opposed by grades of 1.56 and 1.502 per cent, respectively, which are operated as helper grades, and because these sections were single track the slow up-grade movement, together with the return movement of the helper engines, seriously restricted the capacity of the line and pointed definitely to the need of second track in these two sections, namely, a distance of 8.7 miles from Wells to Moor and a distance of 20.2 miles from Valley Pass to Montello. The contract for

Revolving Caterpillar Shovel Reaches Across Main Line to Load Motor Trucks

the grading was awarded to the Utah Construction Company, but all other work in connection with the project was carried on by railroad forces. The grading aggregated 1,000 cu. yd. and involved no particular construction difficulties. Culverts were extended with reinforced concrete pipe. Ballast was obtained from a rock crushing plant belonging to the Southern Pacific immediately east of the double-track work at Lucin. The work was completed on August 16, and at present the section between Spruce and Soda Springs is being double tracked.

Double Track in the Tehachapi Mountains

One of the heaviest traffic, single-track sections of the Southern Pacific is the crossing of the Tehachapi mountains between Bakersfield and Mojave, a distance of 68 miles. Leaving the plain east of Bakersfield at an elevation of about 400 ft. the line rises with grades in many places of as much as 2.2 per cent and curves of 10 deg. to an elevation of 4,000 ft. at Tehachapi, a distance of 48 miles. For the first 11 miles south from Tehachapi the country is comparatively flat, but for the remaining 9 miles into the Mojave desert it descends at a maximum grade of 2.2 per cent and with maximum curvatures of four degrees to an elevation of about 2,750 feet. at Mojave. This mountain crossing embraces 16 tunnels, having a total length of 7,000 ft., all but one of which are on a grade of two per cent or more while 12 involve curvatures of 10 deg.

This line not only carries the traffic of the Southern Pacific's San Joaquin valley route, which is increasing yearly with the rapid development of the fertile San Joaquin valley, but also carries all of the traffic of the Santa Fe main line from San Francisco to southern California. The northern junction of the Santa Fe is at Kern Junction, a mile south of Bakersfield, while the southern junction is at Mojave.

The need of providing second track on this line was recognized in 1918, with the authorization of double tracking on certain portions of the 68-mile district. A large portion of the grading and culvert construction was completed and second track was actually put into service from Kern Junction to Magunden, a distance of 3.9 miles, when the work was cancelled in 1919, to curtail expenditures in the post-war period.

The work was resumed again in 1922, with the result that three sections; namely, Bakersfield to Sivert, Tehachapi to Cameron and Cameron to Mojave, have just been completed. This leaves a stretch of 37 miles of single track from Sivert to Tehachapi. The work thus far completed involves the construction of second track alongside the old line, but the remaining 37 miles, which embraces all of the 16 tunnels referred to above, will require the provision of second track on a modified location for the purpose of affecting a reduction in grade and curvature and to decrease the complications introduced by the numerous tunnels.

Of the portions of second track completed subsequent to 1919, the section from Magunden to Sivert, a distance of 7.7 miles, was completed and placed in operation in June, 1922, thus providing double track for a distance of 11.6 miles from Bakersfield to Sivert. The second unit, from Tehachapi to Cameron, a distance of 8.8 miles, which had also been started and held up during the post-war period, was completed in December, 1922, this project including provision for an 85-car center passing track at Monolith. Both of these units of second track construction were of a relatively simple character. The grading, which was all accomplished with scrapers, was handled under contract with the Utah Construction Company. All other work was carried on by railroad forces.

The same contractor also handled the work in the third unit from Cameron to Mojave, a distance of 10.5 miles, which was of a more difficult character. In addition to second track, the work involved an 85-car center passing track at Warren and a change of line of 3,200 ft. just west of that station for the purpose of reducing curvature. A water supply pipe line 10½ miles long, which supplies Mojave with water, was rebuilt with six-inch pipe. With the exception of the change of line mentioned above, the second track is parallel with the old line in a location on a hillside following the drainage of a creek which gives considerable trouble at times from torrential discharges as a result of heavy mountain rains. This work was completed and placed in operation on August 29.

Laying Second Track in the Sierra Nevadas

We are indebted for the above information to W. H. Kirkbride, engineer of maintenance of way and structures, Southern Pacific, Pacific System, San Francisco, Cal.

TWENTY-EIGHT MILLION is the number of personalities, or kinds of minds, which must be considered when studying the problem of automobile mishaps at highway crossings. This number is an estimate made by F. M. Metcalfe, superintendent of safety of the Northern Pacific, who calculates that there are now in the United States about fourteen millions of automobiles and that there is at least an average of two drivers to every car. Just how these millions of men and women of varying mentality and experience are to be dealt with, to reduce the number of people killed, Mr. Metcalfe in his essay gives us little wisdom not already known. He says that these millions of cars are operated mainly by persons who have very little conception of the power in their control. Their knowledge of their responsibilities is so limited that he deems it amazing that the accident record is so low.

Employee Representation and Discipline*

Experience on the Pennsylvania Indicates That Disciplinary Control Has Been Strengthened

By Elisha Lee
Vice-President, Pennsylvania Railroad System

WITH THE GROWING TENDENCY in industry toward a more general recognition of the right of the worker to have a voice in determining the conditions of his employment, there develops a new anxiety on the part of the executives of large operations as to the effect this more liberal regime may have upon supervision and discipline of the working forces, and upon the attitude of the minor supervisory officers toward these functions of their duties. Out of our experience, I think I can assure them that such change as has taken place, or may be expected from the new industrial relations, is an improvement over anything we have had in the past.

We are passing through an era of big things—we are living in an age of changing viewpoints. Many who have witnessed the transformation which has taken place in industrial relations within the past 10 years have ofttimes, I doubt not, had a feeling of awe that such things were possible and had really come to pass. The old *laissez-faire* relationship between management and men in industry is passing out, I believe, never to return. New methods have been devised of handling industrial relations, and, it seems to me, much wiser relations than were ever before adopted, which are in consonance with the spirit of our changed viewpoints, are being adopted in all industry as fast as industry is able to absorb them.

Old Viewpoints Must Be Recast

The process of assimilating new industrial ideas is naturally very slow. Old viewpoints have had to be re-cast into new—in fact the angle of view has shifted and what was considered just and reasonable 10 or 15 years ago in our industrial relations is not so interpreted now. Likewise, putting the new industrial ideas in effect is necessarily very slow, especially those ideas which have to do with the changing relationships between management and men and which directly and indirectly affect supervision and discipline. It is a good bit like pouring water into a bottle. If you pour too rapidly much will be spilled on the outside and lost.

On the Pennsylvania Railroad we have perhaps gone a little farther in this direction than any other railroad, and probably as far as any industry here represented. We have, in the last three years, put in effect a comprehensive plan, the keystone of which is a joint committee for each general class of employees, which is the highest authority on the railroad in the determination of all questions affecting wages, working conditions, discipline and discharge of employees. These committees are composed of an equal number of representatives of the employees, elected by secret ballot, and of the management. A two-thirds vote of the committee is necessary to a decision on any question. If this two-thirds vote cannot be had, the committee itself decides how a final determination shall be reached. No executive officer of the company, or the board of directors even, has veto power over the decisions of these joint committees.

When we first began to shift our managerial attitude toward the problems arising in connection with letting the workmen help manage, many questions arose as to what would be the general effect of the changed relationships as affecting supervision and discipline. Considerable hesitancy was shown on all sides by supervisory officers toward adopting industrial policies which might have a tendency to weaken that disciplinary control which must at all times be exercised by management, from the lowest to the highest supervising officer. It could not be overlooked that there was a great army of these supervising officers, who were the backbone of the industry—men who were leading in the effort to make the industry a success. It was felt that nothing should be done that would in any way affect the morale of this corps of supervising officers, that would minimize their usefulness as such with the men they were supervising, or that would interfere with that spirit of co-operation which must always exist, not only between the immediate supervision and the men under them, but with their superior officers as well.

Evolution—Not Revolution

This new relationship between management and men on the Pennsylvania has not meant abdication of purely managerial functions. It *does* mean that our employees, by slow, short steps, taken over a considerable period of time, beginning as early as 1907, have been given an increasingly larger voice in determining those questions which arise in the course of their daily work which involve differences of opinion between the management and employees.

For many years our management has been seeking closer contact with the employees, because it was recognized that the employee had a right to have and should have more than mere "payday" interest in his job. In reaching out to establish these closer contacts and gradually to develop the requisite judicial viewpoint in the minds of representative employees, "management and men" committees were appointed to investigate and make recommendations upon certain problems in which it was felt both the management and the employees had a very vital interest.

For instance, about 1912 the employees in one branch of the service raised questions regarding the kind of examination given them in order to determine their fitness and ability to serve in various positions. After considerable discussion, the management offered to form a committee consisting of an equal number of representatives of the management and of the employees, to investigate the subject thoroughly and recommend a plan of examination to be followed.

As far back as 1907 the management realized that a carefully considered treatment of labor questions was necessary if the company wished to thrive as a successful institution. As an initial effort there was organized a committee of officers of the railroad, to sit as an appeal body in cases filed with the general manager by the employees, and to act as counsel in advising the general manager as to the merits or demerits of any particular case.

This was done in the desire to avoid, so far as possible, individualistic control of labor matters through decisions made by the general manager, and also to bring some of the line and staff officers into a more intimate contact with labor questions as presented by committees to the general manager, affording them a chance to become more fully acquainted with labor questions affecting the operation of the property.

*Abstract of an address before the American Management Association, New York City, October 31, 1923.

This had the effect of an education in labor relations not otherwise obtainable, and was one of our earliest beginnings of the plan more recently established, and with which no doubt most of you are familiar.

Of course these methods were revolutionary when compared with those in effect in previous years, and created more or less discussion among the officers as to the probable effects of the changed policy. But as time went on there slowly crystallized in the minds of our officers the thought that there were some very definite lines of contact between employer and employee that could be properly recognized by management which would afford employees a voice in helping to determine the conditions under which they worked.

It was realized, however, that when the management began to share its responsibility with the employees, the employees themselves must be broad-minded enough, experienced enough and well enough balanced to recognize their responsibility in the management of the property. Before the employees and their representatives could assume the burden of such responsibility, it was felt that they must be competent to become co-arbiters of labor questions arising between the management and men and affecting not only their own interest but also that of the company, its stockholders and the public, for the management not only has a duty to perform to its employees, but also a duty to render prompt, efficient and safe service to the traveling and shipping public, and to render a satisfactory accounting of its stewardship to the stockholders of the railroad.

An Uncharted Sea

When the time actually arrived to give our employees a definite voice in helping decide questions which had heretofore been decided by the management alone, it was very much like starting on a voyage on an uncharted sea. There were some real misgivings as to the probable outcome of such action as would divide the responsibility between the management and men insofar as handling of labor problems was concerned.

What would be the effect were the joint committees of review to set aside decisions of the general manager in discipline cases? What would be the effect upon the morale of the supervision and those supervised? And what would be the effect if the reviewing committees desired to take cognizance of questions involving changed pay practices which might run into hundreds of thousands, perhaps millions of dollars?

All of these questions were carefully weighed and notwithstanding their seriousness it was decided to proceed along the paths that were opening before us, which to us at least seemed to lead to better understanding between management and men, and which would in the long run have a tendency not only to maintain the morale of our supervisory forces but to strengthen disciplinary control through employee participation in the decision of appealed cases.

By some this new relation in industrial management is mistakenly called "industrial democracy." Sometimes it is called a "company union." Again it is called "Letting the workmen help you manage." But to us on the Pennsylvania Railroad, it is known as "employee representation"—and it is just that very thing, with all that the words imply. Management has not abdicated its right to promulgate any orders or instructions or to impose discipline in its best judgment, and management transmits the decisions of reviewing committees, which it is in good faith bound to obey.

There has been no loss of respect shown supervision by the employees. On the contrary, there is evidence on every hand of increased respect because first with contact and then conference, confidence followed, then co-operation (the four C's). Withal there has developed a deeper-rooted feeling of respect for the officer on the part of the employee, and as well for the employee by the officer. And out of this mutual respect better *esprit-de-corps* prevails than under previous methods.

A Typical Case

One of our officers, a superintendent, who has had many years' experience as an officer of the company under the old regime, and who now meets committees regularly each month in accordance with the plan set up, when asked recently whether he would welcome a return of the old order, declared emphatically that under no circumstances would he want to return to the old order or relationship existing between employer and employee. He pointed out that never in all his many years' service as an officer had he ever experienced such willingness to co-operate, nor such actual co-operation between men and management, as was taking place today under our employee representation plan. He hoped we should never go back to the old order. The men know their officers better today, the officers know their men better, and they have more tolerance of each other's viewpoints, more sympathy for each other's problems.

This statement is typical, and experience is disclosing that the employee representation plan has not weakened in the least degree the supervising control of the officers over the men they supervised, but on the contrary has strengthened that control, because the employees have been brought face to face with managerial problems such as they never dreamed existed—problems that they now recognize have to be met and solved by management—consequently their respect for management has increased as they have come to know that such problems not alone concern management success but employee happiness as well. And with this respect came a clearer recognition on the part of the employees of the need of just disciplinary control.

Discipline is, with us, by reprimand, suspension, or dismissal. Our general plan is to have on each division a board of inquiry, called the discipline committee, consisting of heads of departments on the division, the individuals being also members of the division superintendent's staff; in other words, division staff officers. This discipline committee reviews every case that involves a question of reprimand, suspension or dismissal, before any action is taken whatever toward disciplining the individual, except that, in major cases, the employee is held off duty until the matter is decided. This treatment of the discipline question has brought about greater discretion in the imposition of discipline and has impressed the employees with its general degree of fairness, because the individual personal element has been entirely removed.

With the introduction of high speed, heavier rolling stock, and the increase of traffic units on the railroad, the complexity of signals and the various devices (many required by law) used in the operation of the railroad, the careful observance of all the rules and safeguards of operation has become increasingly important in the safe transportation of passengers and freight, and it is clearly recognized, both on the part of the management and on the part of the employees, that there can be no temporizing on the question of discipline. At the present time both management and men look upon the maintenance of discipline as one of the prime requisites of safe operation which concerns them both.

Cases Before Reviewing Committee

How successfully this method is operating in the everyday conduct of affairs may be illustrated by the number of cases involving discipline which have come before the reviewing committee for the engine and train service. There have been but 29 of these cases submitted to the reviewing committee upon appeal, and this constitutes all the cases that have been appealed by the employees to the final reviewing committee out of 1,725 discipline cases which were submitted to the superintendents, general superintendents or general

managers under the present plan. These cases involve both major and minor infractions of the rules. Of the cases so appealed to the joint reviewing committee, two were decided in favor of the employees, which means that the division superintendent who had imposed the discipline was reversed, and 23 were decided in favor of the management, which means that the division superintendent was upheld; four cases were withdrawn or referred back for additional information. It will be noticed that out of the 29 cases only two were decided in favor of the employees' contention by a tribunal in which they have equal representation with management.

In the handling of discipline cases on the reviewing committee, there are 12 voting members, six representing the employees and six representing the management. Management and men from the region where the case arises do not participate in voting on discipline cases. All of the cases decided by the reviewing committee must be decided by a two-thirds vote of the remaining members of the committee and that means that there must always be at least two employee representatives voting with the management, or at least two representatives of the management voting with the employees, and in only one case has the vote been as low as this. In some cases it has been unanimous.

Looking at things fairly and squarely, and considering the effect employee representation has had upon disciplinary control, one familiar with the facts must declare that employee representation has not only not reduced the disciplinary control by supervisory officers over the employees, but that on the contrary, disciplinary control has been strengthened. But the results of the plan do not stop here—there is a constructive co-operation on the part of employees and their representatives which is helping to bring about greater efficiency, greater production, the elimination of waste and the elimination of the need for discipline, by making each employee feel that he is a responsible unit in the organization.

Machinery having been provided for the prompt settlement of grievances, employees can put their whole mind upon their work, knowing that all matters in controversy will have final decision in a reasonable time. Through the contact of their representatives and the management, a better understanding of all that is involved in the operation of the property comes to all the employees, and they can take a new and broader interest in their work.

Real Co-operation

Only last month I had the pleasure of hearing a representative of our train and engine service employees, in a frank talk to his own men, urge them to see to it that nobody loafed along the road with a trainload of freight. He minced no words in telling them what he thought of any man who did not "hit the ball" when he had a train to run, or in any other way malingered on the job. In the last year, the committee representing the freight handlers and station forces has conducted, on its own initiative, a vigorous campaign to prevent loss and damage in the handling of freight and to bring about greater efficiency and economy in station operations.

These are typical instances of that closer co-operation between men and management by which it is hoped to knit our whole organization into a smooth-working transportation machine in which every man is doing his part fully, willingly and conscientiously, bearing his full share of responsibility for operating results.

We feel that there should be in the future no cause for strike or lockout in our service. There is no problem in employee relations that cannot be solved across the table under the agreements we have with our men. If the event shall justify this expectation, surely a new feeling of security and contentment may be yours and mine in the knowledge that interruptions of transportation need not in the future accompany the settlement of differences between the railroads and their men.

New Consolidation Legislation Proposed

WASHINGTON, D. C.

SENATOR CUMMINS, chairman of the Senate Committee on Interstate Commerce, returned to Washington this week and announced his intention of introducing a bill in Congress to provide for compulsory consolidations of railroads after a period of seven years, during which voluntary consolidations may take place, subject to the approval of the Interstate Commerce Commission. He said he had not worked out the details of his plan, but mentioned the possibility of holding forth some inducements to railroads to consolidate. He said he desired to confer with various administration leaders, particularly Secretary Hoover. On November 6 he conferred with President Coolidge on the subject of railroad legislation. Senator Cummins expressed the opinion that the Transportation Act should be changed to take from the Interstate Commerce Commission authority over state rates, but said that the real fight in the coming session of Congress will come on a new plan of valuation rather than on Section 15-a.

S. Davies Warfield, president of the National Association of Owners of Railroad Securities, and a committee of representatives of banks and insurance companies, called on President Coolidge on November 5 to urge against any action to repeal section 15-a.

Grand Trunk Investors' Claims Against Canada

By Thomas M. Fraser

HOLDERS of the various stocks and debentures of the Grand Trunk and the Grand Trunk Pacific, now merged in the Canadian National system, have been taking advantage of the presence in London of Premier King and other members of the government of the Dominion of Canada to press claims which they have several times presented to the Canadian government. These claims have been arbitrated upon, carried to the highest judicial court in the British Empire and always with the same result. The latest answer to the members of the Canadian government, while of a placating nature, does not carry any more hope.

The claims of holders of Grand Trunk common and preferred, the so-called junior stocks, to the face value of thirty-seven million pounds sterling ($185,000,000) were submitted to a board of arbitrators (among whom was ex-President Taft) and declared to have no value when the Canadian government took over the railways in 1919 to save them from going into the hands of a receiver. The stockholders refused to accept this decision and have ever since been bombarding the government to reopen their case. This year the government did so and again declared that it could do nothing for them. This was followed by a sort of campaign of financial "frightfulness," assisted by a section of the press of the United Kingdom, in which reprisals against the credit of Canada in London were threatened—a course strongly criticized by the better class of papers in London and which does not seem to have had much effect. They have formed a joint stock company, in which several thousand shareholders are stated to have already agreed to participate, to press their claims.

Lord Askwith, representing this body, has just had a conference with the Canadian ministers in London in which he put the case on compassionate rather than on legal grounds, but he questioned the legality of the order-in-council under

which the property was transferred to the Canadian government. The reply of the government was very frank. It was stated that if anyone deserved consideration it was the Canadian taxpayer who was now paying for the failure of the railway to meet its expenses. Premier King urged the stockholders to let the road alone until it had had a chance to show what it could do. If in time it again earned profits the shareholders could again approach the government on the same basis as they were now doing and if their case had any merit it would not lose it in the interim. Regarding the legality of the order-in-council, it was stated that this was merely the final expression of the act of Parliament authorizing the transfer; but if the stockholders felt any doubt regarding its legality, the government would allow the courts to decide the matter. This reply cannot be considered very satisfactory by those affected; but it is consistent with the attitude which the government has always adopted toward them. Their chance of participation cannot be considered bright.

The position of the other body of investors in the Grand Trunk enterprise who have been pressing their claim upon the government is somewhat different. These are the holders of Grand Trunk Pacific 4 per cent debentures, a delegation representing whom visited Canada last summer and laid its claims before the government in person. The total of this class of security was seven million pounds sterling ($35,000,000). In the case they presented to the government, they claim that debentures have a character above that of common or ordinary stocks, being equivalent to bonds and a prior charge on the property of the company. Debenture holders are not shareholders but creditors. They also pointed out that interest was being paid on the 4 per cent "guaranteed" stock of the Grand Trunk company, which ranked after their own debenture stock in the Grand Trunk Pacific and which had no guarantee at all, while the debenture stock had a conditional guarantee, although under the Grand Trunk Pacific's contract with the Grand Trunk the guaranteed stock was not entitled to any income from the funds of the company so long as interest on Grand Trunk Pacific debentures was in default.

The reply of the government at that time, which is the attitude still maintained, was that the interest on the debentures was payable only when the net earnings of the Grand Trunk provide for them, and in recent years there have been no such earnings. The position of the debenture holders was not changed by the acquisition of the Grand Trunk by the Dominion government, which is the shareholder of the Grand Trunk and assumes its liabilities. The debentures were a charge against the Grand Trunk Pacific, a system which failed to pay its way and is being operated under a receivership since it was abandoned by the Grand Trunk in 1919. They are a contingent charge against the Grand Trunk when it earns a net surplus over fixed charges. The government, in taking over the Grand Trunk, guaranteed the dividends on the 4 per cent "guarantee stock" of the old system, which does not prejudice the priority of the Grand Trunk Pacific 4 per cents in regard to Grand Trunk net earnings. The position, in other words, is just what it was before the Grand Trunk was taken over.

The debenture holders have suggested that it would be possible by a method of bookkeeping to show that the Grand Trunk would not have net earnings by transferring its earnings to the other parts of the Canadian National system of which it is now a unit. Following up this suggestion, some of the debenture holders have been attempting to create what they frankly call a "nuisance value" for their holdings by demanding an independent audit of the railway accounts. Latest reports from London, however, indicate that the different holders of Grand Trunk stocks in London are more reasonable in their position and the debenture holders particularly seem to be in a better mood, realizing that they have a fairly good case for returns if they exercise patience.

Freight Car Loading

WASHINGTON, D. C.

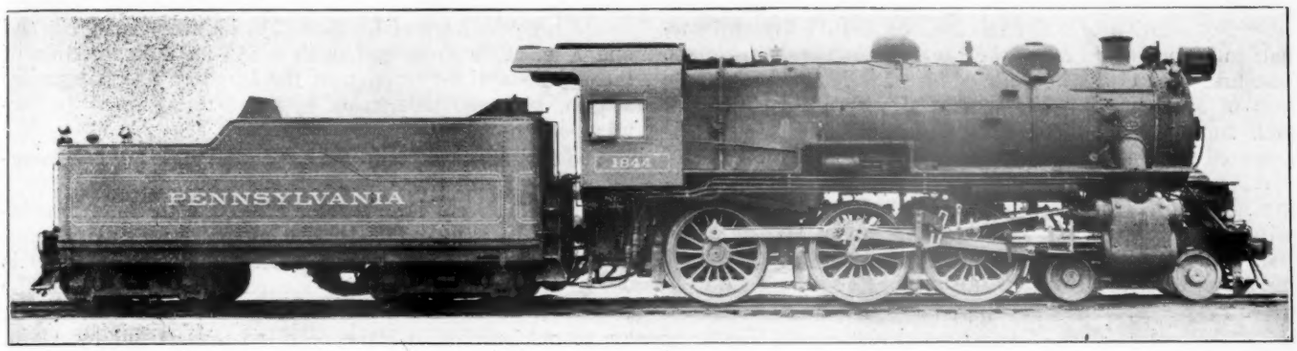
REVENUE FREIGHT CAR LOADING during the week ended October 27 amounted to 1,073,965 cars, an increase of 1,084 cars as compared with the week before. This represents the fourth week in which the total loading has been less than that for the last week of September, 1,097,274 cars, which indicates that that will probably stand as the peak for the year. As compared with the corresponding week of last year there was an increase of 72,247 cars and as compared with 1921, an increase of 122,581 cars. Loading of grain and grain products was less than for the corresponding weeks of 1922 or 1921 and coal loading showed a decrease as compared with 1921, but all other classes of commodities showed increases as compared with the corresponding weeks of both years, the largest increase being that in the loading of miscellaneous freight. Loading in the Allegheny district was less than that for last year.

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, OCTOBER 27, 1923

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded 1923	Corresponding period 1922	Corresponding period 1921
Eastern	1923	9,752	4,090	53,113	2,986	5,601	5,749	68,831	104,317	254,439		
	1922	10,074	3,983	53,461	1,960	5,924	4,735	64,165	98,652		242,954	246,988
Allegheny	1923	2,955	3,479	53,200	5,577	3,475	12,254	52,753	80,622	214,315		
	1922	3,530	3,984	58,698	5,815	3,214	8,811	50,799	80,548		215,399	194,367
Pocahontas	1923	245	363	28,867	451	1,968	96	6,791	5,244	44,025		
	1922	212	369	18,881	370	1,681	48	5,464	3,779		30,804	37,273
Southern	1923	3,503	2,826	24,981	1,024	24,475	1,547	41,347	47,826	147,529		
	1922	3,770	2,643	22,373	1,201	20,767	1,347	38,246	45,183		135,530	130,934
Northwestern	1923	15,786	11,035	9,918	1,497	18,984	32,465	31,561	46,763	168,009		
	1922	15,582	10,241	11,299	1,474	14,709	30,187	26,737	38,625		148,854	125,247
Central Western	1923	12,559	18,079	19,775	256	12,393	2,728	35,644	69,726	171,160		
	1922	13,397	17,714	22,687	324	8,133	2,328	33,140	65,762		163,485	147,618
Southwestern	1923	4,620	4,223	5,681	244	9,122	666	15,643	34,289	74,488		
	1922	4,719	3,644	6,410	142	5,777	394	13,457	28,149		62,692	68,957
Total Western districts	1923	32,965	33,337	35,374	1,997	40,499	35,859	82,848	150,778	413,657		
	1922	33,698	31,599	40,396	1,940	28,619	32,909	73,334	132,536		375,031	341,822
Total all roads	1923	49,420	44,095	195,535	12,035	76,018	55,505	252,570	388,787	1,073,965		
	1922	51,284	42,578	193,809	11,286	60,205	47,850	232,008	360,698		999,718	
	1921	48,210	36,829	210,630	7,396	54,430	18,096	239,571	336,222			951,384
Increase compared	1922		1,517	1,726	749	15,813	7,655	20,562	28,089	74,247		
Decrease compared	1922	1,864										
Increase compared	1921	1,210	7,266		4,639	21,588	37,409	12,999	52,565	122,581		
Decrease compared	1921			15,095								
October 27	1923	49,420	44,095	195,535	12,035	76,018	55,505	252,570	388,787	1,073,965	999,718	951,384
October 20	1923	48,783	45,405	190,451	11,860	70,840	61,924	252,856	390,762	1,072,881	989,889	964,811
October 13	1923	50,294	43,875	194,963	11,928	75,230	60,579	250,027	397,562	1,084,458	969,487	910,529
October 6	1923	50,019	41,554	191,741	12,440	73,259	67,425	254,253	388,999	1,079,690	953,952	899,681
September 29	1923	50,896	41,624	200,970	12,936	75,491	69,172	253,176	393,009	1,097,274	977,791	904,831

Compiled by the Car Service Division, American Railway Association.



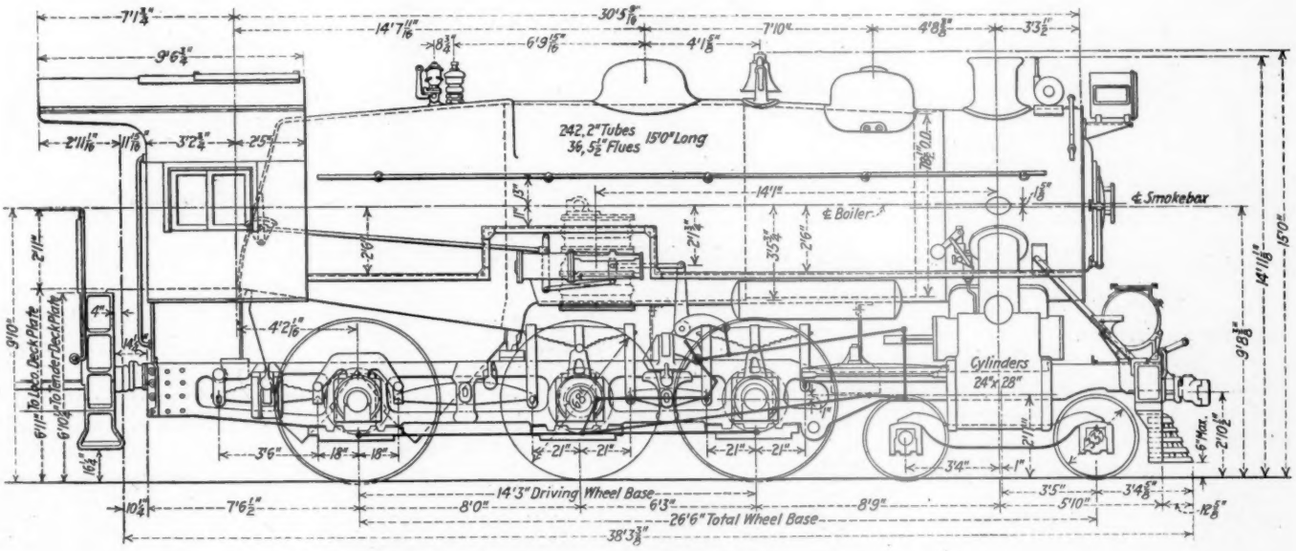
New Ten-Wheel Locomotive for Heavy Local Passenger Service

Pennsylvania Ten-Wheel Passenger Locomotive

New Design for Local Passenger Service with 68-in. Drivers, Develops 41,328-lb. Tractive Force

GRADES OFTEN require double heading when using some of the smaller Atlantic and eight-wheel type locomotives in local passenger traffic on the Pennsylvania Railroad System; during the last few years the need for a medium-size locomotive for this service has become urgent. This service requires large tractive effort for quick starting and rapid acceleration to avoid delay in getting trains under way. Tractive effort for this kind of service is of greater importance than high speed.

A ten-wheel locomotive has been designed, of which 40 have been built at the Juniata (Altoona, Pa.) shops of the railroad to meet this requirement. Some of these locomotives are now hauling heavy trains over steep grades on most exacting schedules and the service results amply justify the design. The locomotive has 24-in. by 28-in. cylinders and, with 205 lb. boiler pressure, develops a tractive effort of 41,328 lb. on 68-in. driving wheels. Although not intended primarily for high speed service, the counterbalancing is such that it may safely maintain a speed of 70 miles an hour. This is made possible by the lightness of the reciprocating parts, which weigh 1,008 lb. on one side, or only .425 per cent of the weight of the locomotive. A piston pressure of 92 lb. per pound of reciprocating parts is thus developed.



Elevation of Pennsylvania Ten-Wheel Passenger Locomotive

Boiler

While the locomotive approaches the Pennsylvania K4s Pacific passenger locomotives in starting force, the boiler capacity compares closely with that of the E6s Atlantic type. Although the shell is somewhat shorter, the tubes have been made the same length by building the firebox without a combustion chamber. In certain details, furthermore, interchangeability has been maintained, both for the sake of maintenance and to simplify fabrication. The E6s front end is an example of the former and the use of E6s dies in flanging the heavy barrel sheet connection for the top of the Belpaire firebox is an example of the latter. The outside throat sheet and the lower half of the rear barrel course are flanged in one piece, but owing to the location of the firebox over the rear drivers, the throat is shallower than that of the E6s boiler.

The internal diameter of the boiler is 76¾ in. at the forward end and 81¾ in. at the dome. This has made pos-

sible the insertion of 242 two-in. tubes and 36 five-and-one-half-in. superheater flues, the same as in the E6s boilers. The firebox is 110¼ in. long by 72 in. wide and has a grate area of 55.13 sq. ft. It is equipped with a Security brick arch supported on three 3-in. water tubes. The grate is arranged with a slope of 17.8 per cent towards the front.

A Type A superheater, consisting of 36 units, with a heating surface of 798 sq. ft. is used. The front end is of the self-cleaning type with an inside extension to the smoke stack reaching slightly below the center line of the boiler insuring proper draft through all flues.

Steam Distribution

The valve gear is of the Walschaert type with all parts made as light as possible consistent with the strength desired. A standard 12-in. piston valve is used. An air operated power reverse gear has been made standard for this type of locomotive. These engines are equipped with the Alco gear, which is provided with an auxiliary air reservoir and check valve to retain sufficient air for reversing the gear several times, or holding it in place in case the main supply of air fails for any reason.

The throttle is of the floating stem type with drifting attachment, a design which is exceptionally easy to operate and responds instantly to any movement of the throttle lever in the cab.

Frames and Running Gear

The frames are of cast steel four inches wide and reinforced to 7⅞ in. over the driving boxes. The driving axles have a 3-in. hole drilled through the center to facilitate their heat treatment. The journals are 9¾ in. by 13 in.

The piston rods on these engines are not of the extended type but are hollow drilled. They are 4 in. in diameter and have a 2¼-in. hole drilled through the center from end to end. This hole is reduced to 1½ in. at the piston fit and to ¾ in. at the crosshead fit where the ends of the rods are forged down. An important feature in the design of the piston rod is that its length is such as will enable the piston to be pulled out of the front end of the cylinder without cutting the piston rod loose from the crosshead. The piston is made with a rolled steel center and a cast iron bull ring fitted with cast iron piston packing rings.

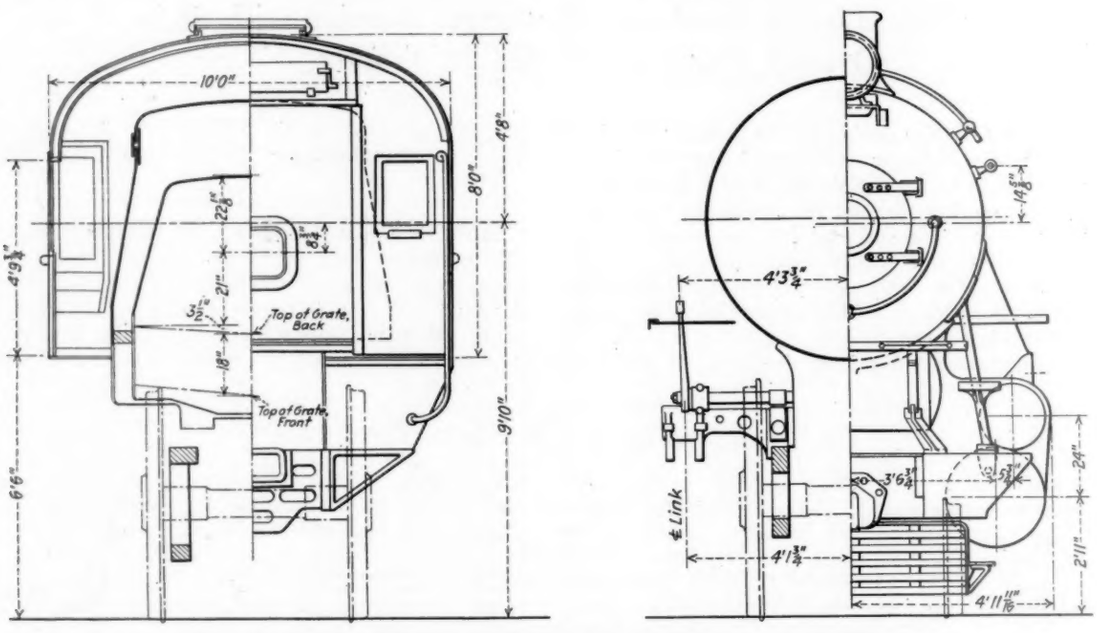
The main rods are of I-section, 7½ in. deep at the rear end and 7 in. at the front end, with a 5½-in. milled section of the rod maintained throughout the length. The flanges are 4¼ in. wide and taper from ¾ in. in thickness at the forward end to one inch at the rear end.

The crosshead runs on three bar guides and is of exceptionally light construction.

A comparatively large tender is used with these locomotives because of the fact that many of them will be used where track tanks are not available. The water capacity is 7,800 gal. and coal capacity approximately 15 tons. The tanks are carried on four-wheel trucks, the front with 5½-in. by 10-in. journals and the rear will have 6-in. by 11-in. journals.

TABLE OF THE DIMENSIONS, WEIGHTS AND PROPORTIONS OF THE LOCOMOTIVE

Type of locomotive	4-6-0
Service	Passenger
Cylinders, diameter and stroke	24 in. by 28 in.
Valve gear, type	Walschaert
Valves, piston type, size	12 in.
Weights in working order:	
On drivers	178,000 lb.
On front truck	59,000 lb.
Total engine	237,000 lb.
Tender	176,500 lb.
Wheel bases:	
Driving	14 ft. 3 in.
Total engine	26 ft. 6 in.
Total engine and tender	62 ft. 7¼ in.
Driving wheels, diameter outside tires	68 in.
Boiler:	
Type	Belpaire, wide firebox
Steam pressure	205 lb.
Fuel	Bit. coal
Diameter, first ring outside	78½ in.
Firebox, length and width	72 in. by 110¼ in.
Tubes, number and diameter	242—2 in.
Flues, number and diameter	36—5½ in.
Length between tube sheets	15 ft.
Grate area	55.13 sq. ft.
Heating surfaces:	
Firebox, comb. chamber and arch tubes	185 sq. ft.
Tubes and flues	2,677 sq. ft.
Total evaporative	2,862 sq. ft.
Superheating	798 sq. ft.
Comb. evaporative and superheating	3,660 sq. ft.
Tender:	
Water capacity	7,800 gal.
Fuel capacity	29,300 lb.
General data estimated:	
Rated tractive force, 85 per cent	41,328 lb.
Cylinder horsepower (Cole)	2,128 hp.
Weight proportions:	
Weight on drivers ÷ total weight engine, per cent	75.1
Weight on drivers ÷ tractive force	4.3
Total weight engine ÷ cylinder hp	111.3 lb.



Cross Sections of Pennsylvania Ten-Wheel Passenger Locomotive

Transportation Act, Amendment vs. Further Trial*

Reviewing the Railroads' Recent Record of Operating Efficiency in First Normal Year Since War

By Julius Kruttschnitt
Chairman Executive Committee, Southern Pacific Company

THERE HAVE been two completed cycles in the public attitude toward common carriers. A third cycle, it is believed, has now begun.

Era of Encouragement

The *first cycle* may be called the period of encouragement. When the railroads had demonstrated their practical value they were more than welcomed by the public everywhere. There was a policy, not to be mistaken, which set no limit to the matter of encouragement, if by any means railroad facilities could be secured. Most liberal charters were granted, subsidies were voted by legislative bodies, large tracts of land were granted to railroad enterprises, and all for the purpose of hastening the establishment of railroad facilities. Individuals were induced to provide money to build the railroads in the well understood expectation, that met with no discussion, that they would be allowed to enjoy the fruits of their public service provided only reasonable rates were charged. A new continent was to be developed, with untold material resources. These were the characteristics of the period of encouragement.

But railroads did not come into existence, as for instance, did the system of national banks, by the fiat of government. Railways had to be planned and promoted by private initiative and financed for the most part by private capital. The natural and inevitable result was a conviction on the part of the individual who invested his capital in a railroad enterprise that he was investing it just as he would in any other private enterprise. In fact, during this period of encouragement there was practically no other conception either in the mind of the investor or in the mind of the public. It was generally believed honestly and sincerely, both by railroad investors and by the public, that railroad business was a private business and that railroads were built to be operated by individuals for their private profit and incidentally for the use of the public.

Era of Repression

The *second cycle* of public attitude was characterized by a punitive and repressive policy. This new public attitude came from a realization on the part of the public, which had been slow and gradual in its growth, that the railroads sustained such a relation to the welfare and fortunes of individuals and communities as to clothe the industry with a public interest and to subject it to public regulation. There thus arose a struggle between the conception of railroads as private enterprises and the conception of railroads as engaged primarily in public service. Victory came to the side of the public conception of the public character of these instrumentalities of commerce.

This second period was the period of the Interstate Commerce Act of 1887, the Elkins Law in 1903, the Hepburn Law of 1906 and the Mann-Elkins Law of 1910. The system of regulation which grew out of this second phase of public opinion was based upon resentment in the public mind against conditions and practices which it condemned. It provided only for restraint and correction and omitted entirely provisions which would have been wise and appropriate for the protection and adequate development of this essential agency of commerce and intercourse. It was taken for granted that the railroads were sufficiently powerful to protect themselves and that the only need was for the protection of the public interest.

Impairment of Credit

The effect of such a punitive and corrective policy upon the railroads was disastrous. Tangible evidence of its unhappy effect can be seen in the operating and financial record for this period. The ratio of operating expenses to operating revenues of steam railroads in 1900 was 64.65 per cent. This ratio kept edging upward until in 1917 it stood at 70.48 per cent. These were significant effects of punitive and repressive regulation, the natural consequence of the feeling that railroads were built primarily for the use of the public, and with scant consideration of the interests of those who parted with their money with which to build them. They occurred during a period of great general prosperity. Agriculture and industry were thriving.

Wholesale prices of commodities in the 17 years rose 120 per cent, but railway freight rates fell 2 per cent. The credit of the railroads under such regulation became financially impaired. Investors, as contra-distinguished from lenders, were no longer willing to embark in a business with such uncertainty of return and with no such offer of reward of success as existed in other industrial enterprises. A financial expert in railroad securities recently testified that no new issue of capital stock in material amounts had been made since 1907. The public is not willing to trust its money in securities the return on which is not fixed, but is contingent on rapid fluctuations in earnings. It became necessary, therefore, for railroads to secure money by adding to their burden of debt. The percentage of funded debt to total capital of the railroads in 1900 was 49.13 per cent. By 1917 the percentage had risen to 54.5 per cent, and during this period freight rate levels were actually reduced.

Rate Adjustment Tardy

A recognition of the condition to which the railroads had been reduced may be found in the decisions of the Interstate Commerce Commission as early as 1910. In this very year when, generally speaking, the Mann-Elkins law may be said to have completed the cycle of punitive and repressive legislation, the commission gave consideration to the condition of the railroads in its reply to the petition of the eastern roads for increased rates. Unwilling to grant this increase, the commission based its refusal upon what appeared to be at the time a new era of prosperity and a stability of prices. The door was purposely left open for a review of the case if the commission's prophecy of impending prosperity for the railroads failed. How far astray the commission went in its forecast subsequent events have demonstrated.

Increasing Efficiency

In spite of this punitive and repressive policy by state and federal governments, in spite of inadequate revenues and impaired credit and in spite of lack of financial resources

* Address at annual dinner, Railway Business Association, Hotel Commodore, New York, on November 8.

to make substantial additions to facilities as needed, railroad management wrote a splendid record of increasing efficiency.

During the 22 years ending with 1922, the ton mileage of revenue freight increased 140 per cent. The railways moved this large increase with only 13 per cent increase in train miles. In the first seven months of 1923, the gain over previous year in ton mileage has been 34 per cent, handled with only 22 per cent more train miles.

In 1890, for every $1 of capitalization, the railroads carried 13.92 traffic units (ton miles plus three times passenger miles, an I. C. C. equation). In 1920, for every $1 of capitalization, they carried 32.71 traffic units. In 1923, the record will be even better than this.

The power of locomotives has been largely increased. The average capacity per freight car increased from 1903, the first year in which these data were compiled, to 1922 46 per cent. The average car load, excluding company freight, in 1903 was 17.6 tons; in the first seven months of 1923 it was 25.4 tons.

Thus it appears that railroad management, with all its handicaps, has a remarkable record of efficiency in so far as its control extends. Over financial credit it has no control. The dark shadow of anti-railroad legislation has lain for many years and still lies upon the credit of the railroads of the country.

Best in the World

The people of the United States have reason to be proud of their railway system and of the results obtained. With 6 per cent of the world's population, this country possesses nearly 40 per cent of the world's railways, which are capitalized at only from one-fourth to one-half as much per mile as those of the principal countries of Europe and charge the public rates only half as much per mile of movement as the European rates. At the same time they perform twice the public service per dollar of capital invested.

Take 1920 as the basis of comparison. The railroads of the United States in that year handled 32.71 traffic units per dollar of *capitalization* and with average receipts per ton mile of freight of 1.052 cents; in other words, a ton of freight was handled more than one mile for a one-cent postage stamp. The railroads of the United Kingdom handled 8.24 traffic units per dollar of *capitalization,* with average receipts per ton mile of freight of 3.029 cents. In South Australia 10.95 traffic units were handled per dollar of capitalization, with average receipts per ton mile of freight of 3.62 cents. In New South Wales 15.67 traffic units were handled per dollar of capitalization, with average receipts per ton mile of freight of 2.49 cents. The foreign currencies in the above statistics have been reduced to American equivalents at the normal rates of exchange. We have been unable to find any data conflicting with the assertions frequently made that the United States has the most abundant and cheapest rail transportation in the world.

The Era of Encouragement

The *third phase,* upon which we have now entered, may be said to have originated with the representations made to President Wilson in September, 1914, by a committee of railroad executives as to the need of a more constructive public policy towards the roads. This was followed by his message of December 7, 1915, in which he called the attention of Congress to the serious and pressing transportation problem and expressed the view that, before further legislation in this field is attempted, it might be the part of wisdom to look at the whole problem of co-ordination and efficiency in the full light of a fresh appraisal of circumstances and opinion as a guide to dealing with the several parts of it.

By a joint resolution, approved July 20, 1916, Congress appointed a committee, of which Senator Newlands was the chairman, which was instructed "to investigate the subject of government control and regulation of interstate and foreign transportation, the efficiency of the existing system in protecting the rights of shippers *and carriers* and in promoting the public interest." (Italics ours.) The interested parties were invited to appear before this committee, which began its hearings November 20, 1916, and ended them in November, 1917. As these hearings progressed the case was made to turn upon the interest of the public in the matter of enlarged and constantly growing transportation facilities and the consequent interest of the public that the carriers should have adequate revenues as a basis for adequate credit.

Within a year after the close of these hearings federal control and management began and continued for 26 months, from January 1, 1918, to March 1, 1920.

Post-War Handicaps

It is not my purpose to discuss the period of federal control of the railroads. I shall mention, however, some of the chief difficulties encountered by private management upon the return of the roads by the federal government, on March 1, 1920. Private management thereupon found itself faced with the problem of restoring railroad personnel and property to its pre-war condition. Conclusive evidence of depreciation in this property is found in the fact that the government has acknowledged a bill for under-maintenance estimated recently by Senator Cummins at $200,000,000, but the Railroad Administration has driven a cruelly hard bargain in these settlements. Private management faced an unprecedented demand for transportation service without adequate facilities, without the return of working capital which had been taken from its treasury by the government, with 78.1 per cent of its freight cars on foreign lines deprived of the watchful care of the owner, with faulty car distribution, with long-standing unsettled demands for numerous wage increases, with admittedly insufficient revenues from existing rates, with tracks which had not yet emerged from an extremely severe winter which had caused great wear and tear upon railroad equipment and permanent way, with national agreements on rules and regulations affecting railway employees, entered into by the director-general and continued by law into the period of private management, and with the morale of employees completely destroyed.

Legacy of High Costs

Mere words cannot convey an adequate impression of these conditions at the end of the 26 months of federal control. The impaired morale of employees and neglect of repairs to permanent way and equipment are evidenced by the unimpeachable statistics of the Interstate Commerce Commission; thus damages to freight, due to careless handling, adjusted to a common basis of index numbers, rose from $20,000,000 in 1917 to $64,000,000 in 1921 as the result of unchecked laxity of discipline during government control. After the return of the roads to private control and the gradual restoration of discipline these payments fell to $29,000,000 in 1922.

Compared with 1917, wages were 94 per cent higher in May, 1920, prices 55 per cent, but rates only 32 per cent higher. Accidents due to defective track were three times and those due to defective equipment two and one-half times as great in 1920 as in 1917.

Strain of Transition

As the result of experience in government control and operation there was a clearly defined and overwhelming demand from the public for a return of the roads to private management. On the other hand, it was also clearly understood that private control and operation of the carriers was on trial before the public. In April following the return of the carriers to private management came the so-called "outlaw" switchmen's strikes, lasting well into the summer. It

was estimated by the commission that these strikes had the effect, through greatly increased congestion at many important gateways and terminals, of taking from the carriers for the time being the use of about 750,000 cars, or one-third of the available equipment. In July, 1920, came the first decision of the Railroad Labor Board, retroactive to May 1, which increased the wages of railroad employees by about 21 per cent. On the basis of the then existing traffic this meant an increase in annual operating expenses of about $650,000,000. In May, 1920, began the most striking economic phenomenon of the year in the break of prices. The wholesale price index number in that month stood at 172 per cent above the 1913 basis. By September of the same year the index number had fallen to 142 per cent above the same basis. Railroad equipment, materials and supplies, however, continued at extraordinarily high price levels until the last quarter of the year and bituminous coal continued at its peak price through December. Meanwhile freight and passenger rates were not increased above the inadequate levels of federal control until August 26, 1920.

1920 Abnormal

Despite these difficulties and handicaps, the railroads, from the standpoint both of the quantity and the quality of the service rendered the public, have an especially creditable record since their owners regained control of them in 1920, in which year they performed the greatest transportation service in their history up to that time. Efficiency has gradually increased through performing more work with less men, less locomotives and less cars, the volume of business handled in 1921 and 1922, however, suffering by reason of the depression of 1921 and the coal strike of 1922. Both of these years were far from normal. In 1923 conditions have more nearly approached normal, and in the first seven months of this year the railroads moved a ton mileage of freight 34 per cent greater than in the same months of the previous year.

As the result of these extraordinary efforts the railroads in 1920 were able to earn from transportation sources only one-tenth of 1 per cent on the tentative valuation by the commission. The ratio of debt to total capital rose to 56.1 per cent. The failure to realize better financial results from railroad operation was primarily due to the long-deferred increase in rates required to balance the very great increases in wages and cost of materials, the heavy decline in traffic which began in November, labor difficulties and strikes and a continuation of high prices for wages and for fuel.

Evidently the year 1920 was far from normal and does not constitute a fair test of railroad operation under the terms of the Transportation Act.

1921 Abnormal

The business depression, which began in the summer of 1920 and increased in severity through the year, continued throughout 1921. Both freight and passenger traffic fell off. There was a large available surplus of equipment during the entire year. The peak of the surplus was reached in April, with a daily average surplus of cars of 493,081. In December of the same year there was a daily average of available surplus freight cars of 396,371. Railroad revenues were reduced and operating expenses were drastically cut, with consequent deferred maintenance of tracks and equipment repairs.

In this year began the rising tide of agitation for reduced rates. Such reductions were numerous, the chief of which occurred as follows: By the decision of August 3 all rates on livestock in western territory, except horses and mules, which were higher than 50 cents per hundred weight, were reduced; by the decision of October 20 rates on wheat, hay, coarse grains and grain products between points in the western and Mountain Pacific groups of railroads were materially reduced; by the decision of December 2 the commission issued a special order approving a voluntary reduction of 10 per cent in the freight rates on agricultural products. In addition, thousands of minor reductions were made, either voluntarily by the carriers or by order of the commission. The total effect of freight rate decreases since August 26, 1920, when rates were advanced, was to reduce revenues to Class I roads from the level then established by at least $500,000,000. The average revenue of 1.23 cents per ton mile in the last quarter of 1920 was reduced to 1.12 cents in the same period of 1922, or about 10 per cent. Passenger rates remained undisturbed.

Effective July 1, 1921, a decision of the Railroad Labor Board, based on a lower living cost, reduced wage levels about 11 per cent. The effect of this reduction upon labor costs to the carriers was a saving estimated at $300,000,000 per year, only half of which was actually experienced in 1921. Other decisions of the Labor Board during the latter part of 1921 caused several changes in the working rules and practices of railway employees, the money value of which to the railroads was less than 1 per cent of the total payroll.

The net railway income of Class I railroads for 1921 was $600,888,351, making a return on the commission's tentative valuation of 3.29 per cent.

The year 1921, with its profound business depression, the agitation for reduced rates and deferred maintenance of equipment, like 1920, manifestly was not normal and does not constitute a fair test of the Transportation Act.

1922 Abnormal

The freight traffic for 1922 showed a marked upward trend for the first three months, due largely to the accumulation of coal in storage in preparation for the coal strike which began on April 1. Because of this increased shipment of coal up to April 1 and because of the decline in shipments due to the coal strike beginning at that date, traffic for the first half of 1922 was unbalanced. In the second half of April and during May and June the merchandise shipments began to increase the volume of traffic. The movement of traffic for the second half of the year approached the highest record in the history of the railroads. Two nation-wide strikes, one by the hard and soft coal miners, beginning on April 1 and lasting for five and one-half months; the other by railroad shopmen, beginning on July 1, interfered with the normal flow of business.

Thus, 1922 cannot be said to have been a year of normal conditions to give a fair test of the Transportation Act.

1923 First Normal Year

Therefore 1923 so far is the only year since the return of the roads to their owners which can be called normal and in which the Transportation Act can be said to have functioned as its framers intended it to do. The character of the service rendered by the railroads in these conditions is the most convincing argument in favor of continuing the operation of the act without change.

False Prophecies

Since the passage of the Transportation Act, as for many years previous, the railroads have suffered from poor business forecasting by the Interstate Commerce Commission. In the rate case of 1910 the commission's decision was largely affected by the results of the previous year of a large volume of traffic. It was then the commission's prophecy that prices of materials, supplies, fuel and wages would become stabilized and would not materially increase operating expenses. All of these prophecies proved untrue. In the Five Percent Rate case, decided December 24, 1914, the commission again prophesied the continuance of the increased volume of traffic which occurred during the months just prior to its decision. This prophecy was likewise erroneous. In the Advance Rate case of 1920, usually referred to

as Ex Parte 74, the increase in rates was based upon a continuance of the extraordinary traffic handled during that year, and yet within two months after that decision traffic began to decline and fell rapidly for the following six months.

Under the rate levels established by the commission the carriers have continued to fail in securing the statutory return provided for in the terms of the Transportation Act. Therefore, the transportation bill of the public for freight and passenger service has been reduced at the expense of a fair return to railroad owners on their property devoted to public use and by amounts for part of 1920 paid out of the United States treasury. In the year 1920 the deficit below the statutory return was over $1,116,000,000. For 1921 the deficit was over $533,000,000. In 1922 it was $334,679,000. For the three years 1920 to 1922 the aggregate deficit below the statutory return was $1,984,563,747. Thus for the period named the public secured their transportation service at a reduction substantially $2,000,000,000 below the statutory return, a large part of which was at the expense of the railroad owners. From September 1, 1920, when the six months' period of guaranteed earnings during the transition from government to private control expired, to August, 1923, or exactly three years, the average annual rate of return on the tentative value of railroads established by the Interstate Commerce Commission has been but 4.0 per cent. For the present year, when the largest freight traffic on record was handled by the railroads, the return has been only 5.41 per cent. Is it surprising that the public is not enthusiastic to invest in railroad securities and if it does so at all that it demands prices that will yield returns of 5½ per cent to 6½ per cent?

No Guarantee

The Transportation Act, 1920, actually contemplated that there would in many cases be revenues higher than the statute allowed. This is demonstrated by the fact that the act provides for a recapture of excess earnings. The statutory return under the provisions of the act is to be realized by groups of railroad systems as a whole, among which are some that inevitably will earn in excess of this stipulated return. But the act does not provide any guarantee whatsoever of any sort of a return to the railroads. This is a widespread and oft-repeated error. This error persists despite the fact that the commission itself has declared that Section 15-a is not a guarantee but rather a limitation on railroad earnings and despite the fact that Senator Cummins, joint author of the act, has declared publicly that no such guarantee exists. There can obviously be no guarantee where there is no provision for redress if the revenues fall below the statutory return. In this instance the railroads have no means of securing a payment of all or any part of the deficient return in past years indicated above.

If it still be contended by those who claim that there is a guaranty that they use this term, not in its legal or technical sense, but merely as a charge that the statute sets up a standard of earnings for these carriers which it is made the duty of the commission, as nearly as may be, to realize, then it seems a sufficient answer to call attention to the fact that the standard so set up is only the standard of a fair return to satisfy the constitutional safeguard against confiscation.

Rehabilitation

Under the conditions existing in 1920 and 1921 the railroads were not able to bring their equipment up to the desired standard because they had neither money nor credit with which to purchase a normal supply. In 1922, however, there began a marked revival in railway development. The equipment orders for this year exceeded those of any year since 1918 as to freight cars, of any year since 1916 as to passenger equipment and of any year since 1918 as to locomotives. In 1922 the carriers expended $467,000,000 for improvements and betterments.

The expenditures for improvements and betterments by the carriers for 1923, according to announced program, will amount to something like $1,200,000,000. From January 1 to October 1 134,636 freight cars had been put in service and on October 1 there were 64,601 freight cars on order. From January 1 to October 1 there were 2,963 locomotives put in service and on October 1 there were 1,242 locomotives on order.

Not only has there been this unusual program for new equipment, but there has also been a strenuous effort to put and keep in repair the existing equipment. As a result of intensive repair work, on October 1, 1923, there were 140,322 less freight cars in unserviceable condition than October 1 last year, notwithstanding cars loaded in the nine months of 1923 were 3,520,326, or 10 per cent greater than the previous peak year 1920.

By October 1 the number of unserviceable locomotives was 9,904, or 50 per cent less than on same date last year, notwithstanding extraordinary traffic handled, the greatest on record.

Fuller Use of Facilities

Higher efficiency also was secured by means of heavier loading per car and more miles per car per day. The average tons per car for the month of August, 1923, increased 2.3 tons over a year ago and the average miles per car per day for the same month was 6.4 higher than a year ago. As one ton added load in the car is equivalent to an addition of 90,000 cars to the available number, and as one extra mile run per car per day adds 100,000 to the available cars, the increases referred to are equivalent to adding 847,000 to the car supply as compared with the car supply of 1922. Adding to this the 140,322 cars due to reduced number of cars under repair makes a grand total of nearly a million more cars available for traffic in 1923 than in 1922. Traffic was handled with 20,000 fewer locomotives for an equal traffic volume.

To have purchased the locomotives and cars thus saved would have cost some $3,500,000,000, the interest on which at 5.75 per cent—the statutory rate—or $300,000,000 was saved to the public by intensive use of existing cars and locomotives. I say *saved* advisedly because in the end the public must provide by adequate rates a fair return on capital invested for its use. The largest number of cars loaded in the history of the railroads was 1,097,274 for the week ended September 29. This explains how the car-loading records were broken 13 times up to October 13, 1923, date of last report, and answers the question often asked, How are the railroads able to show such extraordinary results?

Car Service Division

In discussing the improved efficiency in the operation of the roads attention should be directed to the work of the Car Service Division of the American Railway Association. Some idea of the work of this organization can be gained from a brief review of its activities.

The Car Service Division in anticipation of the needs in the agricultural producing sections of the west this year instituted a program for the movement and accumulation of empty cars from eastern and southern lines to western lines to properly protect the producers in that territory.

Under its program the eastern and southern lines delivered through the gateways of Chicago and St. Louis alone since April 16, 107,299 empty cars of western lines' ownership, and in addition 24,585 of their own box cars. This means a total delivery to western lines since April 16 of 131,884 empty box cars of both western and eastern lines' ownership, with the result that there has been ample equipment in the west to fully meet the agricultural needs, the roads in that district having as a whole 100 per cent or in excess thereof of their ownership.

Field Organization

The Car Service Division has extended its organization by the appointment of district managers and car service agents, and through more intensive supervision of car handling, both as to respecting the ownership of the car and also in the unloading and movement of refrigerator cars, has brought about a more equitable distribution and handling of cars than has existed for several years. All of this has been accomplished while the railroads, particularly in the eastern territory, were loading the heaviest business ever handled in their history. September 30 there was a net surplus of 25,904 cars.

To bring about a better understanding with the shippers the Car Service Division organized regional advisory boards of the shippers to study the problems of greater efficiency in car handling and with particular reference to the heavier loading of cars. These boards served to force a common meeting ground between the shippers and the railroads for better understanding of transportation questions, to adjust informally difficulties which may arise, and to give the shippers more complete and accurate knowledge of the car-handling problem, with an ultimate view to the elimination of transportation difficulties as related to car handling.

The results obtained from the work of the Car Service Division appear clearly to show the effectiveness of such an organization in an equitable distribution of freight cars. It is certainly clear that by this means car distribution is flexible and is quickly responsive to the specific needs of localities and individual industries. It is also clear that the excellent results obtained render unnecessary the formation of an organization independent of railroad management for the purpose of pooling freight cars and of owning and controlling them independently of railway management itself.

Official Satisfaction

Chairman C. M. Reed, of the Public Utilities Commission of Kansas, in a letter to Mr. Aishton, president of the American Railway Association, says of the Car Service Division:

"I feel it is doing an exceedingly good work, not only in improving the technical efficiency of car service, but in getting over to the public what you are trying to do and securing its co-operation.

"I think your Car Service Division work is easily the most intelligent dealing with the public that I have seen and you and it are to be congratulated."

Because of my natural bias, it would not be surprising for many of you to discount the claims of efficiency I have advanced, so that unprejudiced opinions will be illuminating.

Sir W. M. Acworth, a high British authority on railway operation, said some years ago:

"It has always been my opinion that in actual economy of operation, the railways of the United States are first in the world. In number of tons per car, cars per train; in the fullest utilization of locomotives; in the obtaining of the greatest measure of result for each unit of expenditure, they are not equalled by the railways of any other nation."

Interstate Commerce Commissioner Potter, in the assigned car case, June 13, 1923, stated:

"It must be recognized that the railways are making supreme effort, with much success, to meet the demands upon them. They are now more efficient than at any prior time in their history. With fewer men, they have in recent months exceeded all prior achievements. They have been handling tonnage in record volume so efficiently that there has been scarcely a murmur of complaint, and so smoothly that their marvelous performance is scarcely noticed.

"Already superior in public service to every other system of transportation in the world, they are headed for better work in which there is promise that railway problems will disappear."

Favorable Condition Essential

The information herein given demonstrates clearly the progress made by the railroads in their return to a high degree of efficient service. It also indicates the possibility that railway management may so adjust itself under the provisions of the Transportation Act that railroads may once again be on an even keel, may secure and maintain a higher and more effective plane of service, and keep step with the advancing demands for transportation. But this goal cannot be reached if the railroads are constantly to be harassed by attacks of political agitators, by misrepresentation and by threats. Neither the railroads nor the people of this country can know the full possibility of transportation service under the provisions of this act until it has been in operation for a reasonable length of time under more stable and particularly under normal conditions, which we have pointed out have not prevailed during 1920, 1921 and 1922, the first three years after return to private control.

Why should further restrictive and repressive legislation be sought? Are not the railroads today sufficiently burdened with legislative regulation?

Shippers Fully Protected

Certainly there can be no legitimate interest of the shipping public which will not be adequately protected during a fair trial of this act by its provisions as they now stand. Consider what the act provides. It provides that the rates shall be fixed or controlled by the government and not by the carriers; that all rates shall be reasonable and shall be fixed by the government at levels which, while embracing only rates that are reasonable, will satisfy the constitutional requirement of giving the owners of the property "as near as may be, a fair return" on the value of the property used in performing the service; that the question of what amounts to a fair return shall be determined by the government and not by the carriers; that the value of the transportation property on which the fair return is to be estimated shall be fixed by the government and not by the carriers; that the question relative to rates, of whether or not the management of the railroads is honest, efficient and economical and the expenditures for maintenance of way and structures are reasonable, shall be determined by the government and not by the carriers; that the question of whether or not stocks or bonds shall be issued, and if so, in what amount and on what terms, shall be determined by the government and not by the carriers, and that unjust discrimination and favoritism against or in favor of any of the carriers' patrons shall be unlawful and will not be permitted by the government. With such provisions there seems to be no ground for the fear that, from the standpoint of the shipping public, carriers engaged in interstate commerce are not under existing laws completely regulated.

Time Required

The railroads in this country, it is believed, will be accorded a greater degree of justice under the new public attitude than heretofore. The public wants adequate service. For such adequate service the railroads must secure a fair return. This is the hope which this new public attitude brings to railway management. But it must be realized that a restoration of confidence in the railroads and the stabilization of their credit must necessarily be of slow growth. Such a feeling of confidence and such stabilization of credit will be the result of a long period of experience and the consistent following of a fair, equitable and definite policy.

It is often said that private management of railroads in this country is on trial and is being given its last chance. I have told you in considerable detail of the record of private management under the terms of the Transportation Act. I have shown you how private management is struggling back to a tolerable condition. There is, however, another side to this problem. Not only is private management on trial, but also the public and you, as a part of that public, are on trial. The public and you represent government regulation and you are on trial today to a greater extent than are the railroads.

The question under consideration is whether to continue the operation of the Transportation Act as it now stands or to amend it. You must remember that the government, repre-

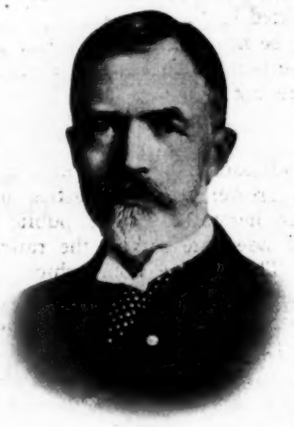
senting the public, has so far invaded the field of management as to be approaching the condition of actual government ownership, without, however, having paid the purchase price therefor. The government has the power of management, but it has not assumed the risks and responsibilities of management. The owners of the railroads have very little more to lose than what has already been taken from them, but the public that pronounced so emphatically in 1919 and 1920 against actual government ownership and the public that enacted the Transportation Act as it now stands has far more to lose if the railroads are forced into government ownership, as they inevitably will be unless they are given an opportunity to function properly under the terms of the Transportation Act. These public losses will appear as inadequate transportation service, as increased operating expenses with resulting deficits to be paid from the United States Treasury, as the loss of our $300,000,000 taxes now paid by the railroads, as decreasing morale of employees such as was prevalent during the period of government control. These are losses which the public now escapes.

Which?

Amendment of the Transportation Act, therefore, means the probability of incurring the risks of management as indicated above. Further trial of the Transportation Act means an opportunity for private management to demonstrate its ability to afford adequate service at lower cost. Which of these will you choose?

Fortieth Birthday of Standard Time

SUNDAY, NOVEMBER 18, a week from tomorrow, will be the fortieth anniversary of the adoption of our present standards of time, which took place on Sunday, November 18, 1883; and it will be fitting to pause for a moment and recall the labors of those who brought about such a thoroughgoing change throughout the whole country in a single day.



William Frederick Allen
Father of American Time Standards

The railroads of the country were using 49 different standards, and in some cities three or four standards were in use at the same time (on different railroads). Traveling men in Southern New England carried watches fitted with two hands to show the minutes, fixed twelve minutes apart; one indicating the time of Boston and the other that of New York. The device, however, was only a partial aid, as other standards—New London, New Haven and Providence—were in use on certain smaller railroads. The adoption of only four standards for the whole country was like a calm after a storm.

To recall the labors of the reformers who accomplished this general simplification of travel and train operation means, however, not much more than recalling the labors of one man, William F. Allen, secretary of the General Time Convention, now the American Railway Association. The thing to do was not to devise a plan but to get a plan adopted; and in Mr. Allen was combined the requisite wisdom and tact with the official authority (the secretaryship was the chief seat of power in the loose association then existing) needed to give to his tactfulness the final bit of quasi-authority necessary to bring slow or reluctant railroads into line. There was not, however, any great reluctance, except in the sense that the decisions fixing division termini required an immense amount of correspondence and adjustment. Railroad officers who had to deal with those cities which are located midway between two standard meridians had to move with caution, and finally in a few cases had to override some local prejudices; but everything became calm within a very short time.

The *Railroad Gazette* of November 23, 1883, noticing that the new standards had been adopted on the previous Sunday "without shocking anyone" spoke of the action of the city council of Bangor, Me., which adopted an ordinance providing for the change (the clocks having to be put back 25 minutes); the veto of the ordinance, and then the vote sustaining the veto; and observed that Bangor "probably would have to go by United States time after a while, and if it does not, it matters little to the rest of the world. It will have to travel by the 75th meridian time whether it eats and sleeps by it or not."

It may be observed in passing that while this view was substantially correct, it is a safe conclusion that the editor of the *Railroad Gazette* had never thought of the various mixing-up processes that could be thought of when the time should come that people would find it necessary to change their clocks to "summer time" in order to stimulate their courage to the extent necessary to get out of bed an hour earlier in the morning during the summer than in the winter.

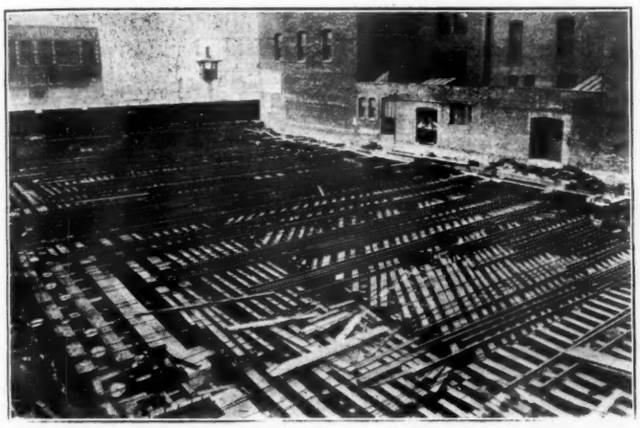
Mr. Allen also was editor of the Official Guide (1872 to 1915) and in the issue of that publication for December, 1883, he printed "a brief history" of what he had done. He gives credit for the first proposal to fix time standards one hour apart to Professor C. F. Dowd, who laid it before the railroads in 1869. Nothing was ever done about it, however, and Professor Dowd proposed the change for the railroads only, not for householders generally. The most prominent advocates after that were Dr. F. A. P. Barnard, Professor Cleveland Abbe and Sanford Fleming. Nothing practical however, was accomplished by these somewhat academic discussions. One of the proposals was to use the standard of the 90th meridian (now Central Time) for the whole country. Even as late as 1881, when a paper by Dr. Barnard and Professor Abbe was read before the General Time Convention, the members manifested practically no interest at all. But the paper was referred to the secretary (Mr. Allen) and his studies in the problem of putting the even-hour differences into actual use resulted in a report, presented both to the General Time Convention and the Southern Time Convention in April, 1883. Only 56 roads were represented in these two meetings and the problem then was to secure the assent of about 500 other roads. This task was handed back to Secretary Allen; and the general adoption of the whole scheme seven months later is the evidence of his complete success. What may perhaps be called his principal argument was a pair of large (duplicate) maps of the United States with the railroad lines colored to show the standard of time used on each. One map was a picture of inextricable confusion while the other showed the boundaries of the proposed zones, with immense territories appearing in a single color.

Mr. Allen was born at Bordentown, N. J., October 9, 1846, and was engaged in railroad service in his early life on the Camden & Amboy and the West Jersey Railroads. He joined the Official Guide in 1872 and began his service as secretary of the associations of railroads in 1875. His activities in the matter of standard time made his name known all over the world, and various honors were conferred upon him by European governments. He died at his home in South Orange, N. J., on November 9, 1915.

A 7,500-Ton Office Building is Moved 85 Feet

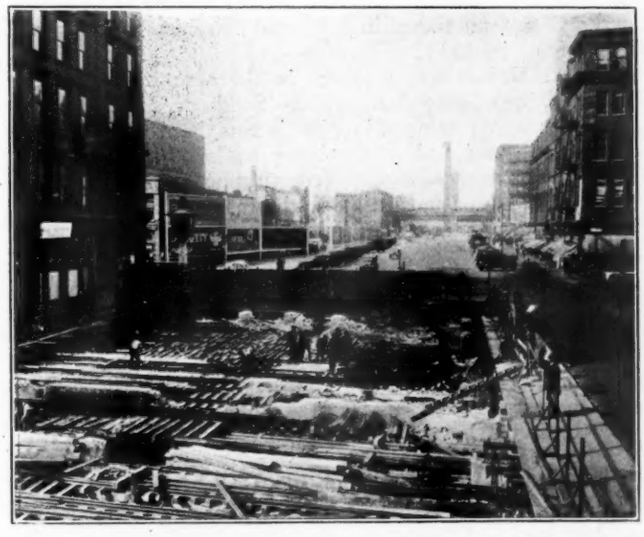
Preparation for Terminal Improvements at Chicago Requires Shifting of Seven-Story Structure

THE MOVING of a seven-story building, 81 ft. wide by 131 ft. long, for a distance of 85 ft. was an engineering feat recently completed in connection with the preparations being made for the prosecution of the extensive terminal improvements to which the Illinois Central is committed in Chicago. The primary object in moving this 7,500-ton building was to open the way for the extension of Roosevelt road to the east as a means of providing a fitting approach to the monumental passenger station which the railroad has planned to build at this point.



The Track and Cribbing Ready for the Moving of the Building

The building, which is used as an annex to the general offices, may be classified as being of the wall-bearing type; that is, with floors carried on wood joists supported on exterior brick walls and interior columns and girders of cast iron and steel. The north and west sides of the building, fronting on Roosevelt road and Michigan avenue, respectively, are faced with cut stone. The old foundations were of rubble masonry supported on wide slabs of stone resting on blue sand. No piling or wood grillage was used. The following information concerning the methods by which the moving was handled was taken from a paper by Hugo Filippi, engineer and superintendent for William H. Brown & Co., Chicago, the moving contractors, which was presented before the Western Society of Engineers at Chicago on December 3.



How the Shifting of the Building Opened Roosevelt Road

A concrete foundation was provided on the new site according to plans providing for a maximum soil pressure of 3,000 lb. per sq. ft., as required by the Chicago building code.

This concrete foundation was essentially of rectangular plan with continuous footings under the interior and exterior walls and isolated footings for interior columns. A concrete floor was also provided over the entire foundation area to serve as a basement floor but this was made nine inches thick so that it could be used as a base for the cribbing necessary for the supports of the rolling equipment used in moving the building.

The first step in underpinning the building was the digging of open cribbing pits. These pits were carried down to the hard blue clay as a safeguard against settlement. Holes were then cut through the brick wall, one at a time, with a pneumatic drill and the needle beams were placed on the cribs and jacked up against the brickwork until the needles carried most of the load, the intervening brick piers carrying the balance.

The Building Is Used as an Annex to the Illinois Central's General Offices

The north and west walls of the building below the second floor level are supported by cast-iron columns. Here the problem was different and it was decided to cut off those columns below the first floor level and to support each column on two I-beams. The columns were cut off in two steps to a smooth, square bearing with an acetylene torch. The first step consisted of cutting out one-half of the column and in-

serting and jacking up an I-beam. After this had been done the remaining half of the column was cut away and the second I-beam was driven into place and jacked up to take its share of the load. In the case of the stone columns, this procedure was not possible and the stone was cut away a little at a time and the load taken up by rails wedged tightly against the stone. The interior cast-iron columns were handled in the same general manner as the exterior columns.

The building was moved on 23 tracks consisting of four or more rails each extending for the entire distance from the old to the new sites of the building. Each track supported one line of needle beams or longitudinal timbers. Some of these timbers were of unusual size, those under the east and west walls being 20 in. by 20 in. by 90 ft. in length. The rails used were of 65-lb. to 75-lb. sections varying from 10 to 30 ft. and were supported on timber cribbing in parallel lines four feet wide and about six feet center to center resting directly on the cement floor. In general, the cribbing built under the old building was composed of 6-in. by 6-in. and 8-in. by 12-in. material, while the cribbing on the new site was 6-in. by 8-in. and 7-in. by 16-in. timber. In all, over 600,000 ft. b.m. of lumber was used for this purpose.

The actual movement of the building was accomplished with the use of over 2,000 steel rollers placed on the tracks of railway rails mentioned above at about 12 in. center to center. The weight of the building was transmitted to these rollers through roller plates 12 in. by ⅜ in. and shoe timbers of 4-in. by 12-in. section. The rollers were 2 7/16 in. in diameter and had a length of about three feet. They were made of cold rolled shafting.

The power for moving the building was supplied by four teams of horses through the agency of four building movers' capstans which were used for the winding of ¾-in. wire cable carried through a series of 25 blocks of which 12 were attached to the building and 13 were anchored to 20-ft. steel rails driven into the ground and braced against the face of the new concrete foundation.

The observed speed of the horses was about two miles per hour and the best record for the moving of the building was 30½ in. in four minutes. The average speed of moving was four feet per hour and the total distance which the building was moved was 85 ft. The actual moving time for the entire job was 20 hours with a maximum distance moved in one day of 42 ft. 3½ in. In addition to being moved in a southerly direction, the building was turned slightly and moved 6¼ in. in a westerly direction. The secondary movement was accomplished by a slight skewing of the rollers which was carefully adjusted previous to the movement over the last 20 ft.

The multiplication between the pull of the horses and the pull on the cable was about 1 to 15 and it is estimated that the friction ratio for the entire equipment, including the capstans, the tackle and the rollers, amounted to about 5 per cent. The four horses handled the load readily and it is believed that the pull per team did not exceed 500 lb. at any time. The work of moving this building was supervised for the railroad by D. J. Brumley, chief engineer, Chicago terminal improvements, Chicago.

THE SOUTHWESTERN RAILWAY DEVELOPMENT ASSOCIATION will hold its next meeting at Tyler, Tex., in April. Industrial, agricultural and immigration problems viewed will be discussed at the meeting.

SUIT HAS BEEN BROUGHT against the Canadian Pacific in the British Columbia Supreme Court by executors of the late J. R. Cowell, formerly clerk of the Alberta Legislature, asking damages of $15,000, on the allegation that Mr. Cowell's death, which occurred on April 16, last, was caused by food eaten by him in the railway company's restaurant in Vancouver.

Death of Colonel H. S. Haines

COLONEL HENRY S. HAINES, former president of the American Railway Association and a prominent railway officer for 20 years—1877-1897—died at his summer residence in Lenox, Mass., on the morning of November 3, in his 87th year. His health had been in precarious condition for about six months; but up to that time he had been actively at work on a new book, "Modern Relations of Labor and Capital" which, if he had lived, would soon have been published.

Colonel H. S. Haines
[About A.D. 1887]

Colonel Haines had two careers, almost distinct from each other. Beginning before the Civil War he was a leader in the southern railroad field until about 1898, being a vice-president in the Plant System for 18 years. Prior to 1898, he resigned all his railroad positions and traveled extensively in Europe, not only studying and observing but also doing some engineering work. Colonel Haines has lived in Europe much of the time since 1898, first in Alassio, Italy, and then in Eastbourne, England, but visiting America occasionally. Soon after the outbreak of the World War, he returned to America, and has since lived in Springfield and Lenox, Massachusetts, Springfield being the winter home. Here Colonel Haines wrote his most important book, "Efficient Railway Operation" (noticed in the *Railway Age* of June 20, 1919). He had written other books, and the last 20 years may be called his literary career. "Railway Corporations as Public Servants" was published in 1907 and "Problems in Railway Regulation" in 1911.

Colonel Haines was a leader in the organization of the General Time Convention and the Southern Time Convention which were combined in what is now the American Railway Association; and of the latter he has been called the father. Its "rules of order" (constitution) were mostly his work. He devoted much time to the interests of the association for several years, and, being a natural leader, he was, among railroad officers, perhaps the most popular member of the fraternity in the whole country. He was president of the association from 1887 until 1896, when, having retired from the railroad operating field, he was no longer eligible.

Colonel Haines' position of leadership was a natural product of his high character, strict integrity and splendid mental endowment. He made his mark as an executive officer in his early years; but he was an indefatigable student all his life. His three books, written after he was 70 years old, were the natural outcome of his unbounded energies; and at the age of 86 he kept in close touch with every phase of railroad life. His last work, "Efficient Railway Operation," is a masterly production, full of facts of interest to all students in the railway field, with rational and illuminating comment. It has been translated into Japanese for use on the government railroads of Japan.

Henry Stevens Haines was born at Nantucket, Mass., November 21, 1836. His railroad career was wholly in the South, though this statement should be qualified by the explanation that the Plant System roads, with which he was connected did a large share of their business in New York City, and Colonel Haines spent his time mainly in New

York, for a number of years. He began his railroad service about 1853 and was a locomotive engineman, an apprentice in the machine shops and a rodman in the engineering corps. He was engaged in the construction of the Wilmington & Manchester, the Charleston & Savannah and other roads. In 1860 he was appointed superintendent and chief engineer of the Charleston & Savannah and served in that position for six years; but this included also the period of the Civil War (1861-1865) when Colonel Haines was an officer in the Confederate army, having charge of its transportation service. He witnessed the bombardment of Fort Sumter.

From 1866 to 1880 he was general superintendent of the Atlantic & Gulf (Savannah, Ga., to Bainbridge, now a part of the Atlantic Coast Line). In his best known position, that of chief operating officer of the Savannah, Florida & Western, he began in 1880 and continued there for 18 years. His first title was general manager, later vice-president. When the Charleston & Savannah was taken into the Plant System, he was made vice-president of that company also. In September, 1895, he resigned his position in the Plant System and was for two years commissioner of the Southern Freight Association. Then for sometime he was out of railroad service. Later he was for a short time vice-president of the Atlantic & Danville.

Colonel Haines' later career, as outlined in the first part of this sketch was not by any means devoted wholly to pleasure trips and literary work; he kept in touch with America all the time that he was in Europe. On two occasions he returned to give a course of lectures on railway economics, one at Cornell University and one at Boston Law School (1907). He was long a member of the American Society of Civil Engineers and was vice-president of it in 1901-02. he had been a member of the American Society of Mechanical Engineers since 1893, and was on the active list up to the time of his death.

Though living so long in New York, Italy, England and Massachusetts. Colonel Haines remained a Southerner, and he was buried at Savannah, Ga., on November 6.

Railroads Decline to Reduce Export Wheat Rates

WASHINGTON, D. C.

THAT THE RAILROADS BELIEVE that a reduction in the export rates on wheat would not benefit the American wheat grower, but would only result in the lowering of the price of export wheat at the expense of the railroads, was the reply given by a committee of railroad executives on November 1 to the suggestion made by President Coolidge to President Rea of the Pennsylvania on October 16 that he thought it would be helpful if the railroads could make some reduction in these rates. The reply of the railroads, expressing conclusions reached at meetings in New York of the traffic officials and of the executives, was not, however, delivered to the President, but to the Interstate Commerce Commission.

While no official explanation of this fact was advanced, it is understood that the committee of railroad executives appointed at a conference in New York on October 30 had expected to make their reply direct to the President, but that after some telephoning they were referred instead to the Interstate Commerce Commission. Apparently President Coolidge had reached the conclusion, after the announcement had been made from the White House of his suggestion for a rate reduction, that he was being put in a position before the public of attempting to interfere or use his influence on a subject within the jurisdiction of the Interstate Commerce Commission. On the same day that Mr. Rea had called on the President at the White House, the commission had announced an order for a general investigation of grain rates throughout the United States and it had previously ordered an investigation of anthracite rates, as to which the President had also made suggestions to Mr. Rea. During the following week, when inquiries were made at the White House as to whether any reply had been received from the railroad executives, it was stated that the President was not expecting any replies, because the matter was officially before the Interstate Commerce Commission, and that he had merely made an informal suggestion to Mr. Rea, which he had not intended to be considered as indicating any attempt to influence a decision either of the railroads or of the commission. The White House statement had also referred to complaints the President had received of alleged discrimination in the rates on anthracite coal in favor of Canadian consumers as against domestic consumers and he had apparently understood that coal shipments to Canada were made on export rates lower than the domestic rates. No reference was made, in the statement of the railroad executives regarding their conference with the Interstate Commerce Commission, to any rates other than export wheat rates, nor to the source of the suggestion for a reduction of those rates.

The committee appointed at the conference in New York on October 30 consisted of Samuel Rea, president of the Pennsylvania; Howard Elliott, chairman of the Northern Pacific; J. E. Gorman, president of the Chicago, Rock Island & Pacific; W. H. Finley, president of the Chicago & North Western, and H. E. Byram, president of the Chicago, Milwaukee & St. Paul. They were in conference with Chairman Meyer and Commissioners Hall and McManamy of the commission for about two hours and later gave to the press a statement that they had informed the commission that "the question of a reduction in the rates on wheat for export for the purpose of improving the condition of the wheat farmer" had received "most careful consideration by the railroads of the country as a whole" and that after a "thorough and sympathetic review of the entire situation," the following conclusions were reached:

1. Such a reduction in rates will not lessen the competition with foreign countries, notably with the Argentine and with Canada, from which latter country exports are far greater in volume than from the United States, and therefore will not stimulate the movement from this country, particularly since Canadian railroads have always concurrently adjusted their rates on export wheat with respect to those currently carried by the United States lines, and there is no reason to believe that they will make any exception in this instance.

2. It was found impracticable to confine the proposed reductions to the eastern roads, as at one time thought possible, as inevitably the western roads would be forced to make corresponding reductions on wheat for export through the gulf and Pacific Coast ports, because of the reduction of rates on eastern roads to the Atlantic seaboard; and it is generally conceded that the western roads are in no position to stand any reduction whatever in their revenues. It was likewise found that it would not be practicable to confine the proposed reductions to wheat alone, as corresponding reductions would inevitably follow on flour, other grain, and their products.

3. The proposed reduction in export wheat rates would result in a material loss of revenue to all the carriers, many of which, in the East as well as in the West, are not in position to earn such a return as will re-establish credit and attract the capital necessary to provide adequate transportation facilities.

Attention was also called to the fact that an inquiry has been instituted by the Interstate Commerce Commission in regard to the rates on grain and grain products throughout the entire country, covered by their docket 15263, the first hearing which has been called for November 14 at Kansas City.

"The roads have every desire to help the wheat farmer and have approached the matter in that spirit," the statement continued, "but they believe that a reduction in the export rates will not benefit the wheat grower for the reason that, conforming to long established and well recognized economic

laws, any reduction in the rates on American grown wheat will be immediately followed by corresponding lowering of rates or prices on wheat grown in Canada, Argentine, and other wheat exporting countries, and consequently no change in the situation would result other than a lowering of the price to the foreign consumer without benefit to the American farmer and at the expense of the railroads."

At the White House on Friday it was stated that the President had "learned indirectly" that the railroads had decided that it would not be feasible to reduce the export wheat rates at this time and that while the President had suggested that the roads consider whether reductions could be made, he had not expected a direct reply. It was emphasized that the matter is before the commission, but that the President had thought that if voluntary reductions could be made the result could be attained more expeditiously than through a process of protracted hearings and that he had not sought to indicate whether reductions should be made.

The fact that the executives had their conference with the Interstate Commerce Commission instead of at the White House caused some comment in Washington. It was recalled that on the last occasion when some reductions in export grain rates were made by the railroads, with the consent of the Interstate Commerce Commission, a statement calling attention to the reductions was issued from the White House.

The American Farm Bureau Federation issued a statement on November 2 saying that the decision of the railroads in no way alters the determination of the federation to insist before the Interstate Commerce Commission that rates be lowered. Among other things, it was stated, the federation intends to ask why Canadian railways can haul wheat so much cheaper to the head of the lakes than can our railways just across the line. However, the statement added, the petition of the Farm Bureau Federation for a reduction in the rates on wheat for export "is only a small matter compared with the problem of readjustment of all rate schedules upon a much more equitable basis, in which bulky, cheap commodities will bear a more just proportion of the transportation burden."

The Interstate Commerce Commission has issued an announcement of additional dates and places for hearings on rates on grain and grain products in addition to that already announced for Kansas City on November 14. An additional hearing in the Kansas grain case, which was recently reopened by the commission, has been set for November 26 at Minneapolis before Commissioners Aitchison, Esch and Campbell and Examiners Keene and Beach. Hearings in the general investigation of grain rates will also be held at Spokane, Wash., on December 5; San Francisco on December 11, and Phoenix, Ariz., on December 17.

Freight rates are mentioned only incidentally in a report on a special investigation of the wheat situation made to the President by Eugene Meyer, Jr., managing director, and Frank W. Mondell, director of the War Finance Corporation on November 5. After numerous conferences in the wheat-growing section they reported that "in many places increased freight rates, resulting in a dislocation of available markets, were presented as a factor of vital importance," and that "the prices realized by the farmer for his wheat, although higher than the pre-war figures and also higher than they were a year ago, are not sufficient, when increased freight rates are taken into consideration, to maintain the producer on a satisfactory basis."

However, a reduction of rates was not included in a list given of the more important plans for dealing with the wheat situation suggested at the various conferences.

The Department of Agriculture, in a monthly review of agricultural conditions, while stating that the spring wheat territory continues in distress, says that the purchasing power of farm products, while still at a disparity as compared with industrial products, is now at the highest point in three years. The index of purchasing power of farm products as a group for September is placed at 75, as compared with 73 in August and 64 in September last year.

Investigation of rates on all basic commodities has been requested of the Interstate Commerce Commission by the American Mining Congress through J. F. Callbreath, its secretary, in connection with the commission's investigation of grain rates. "We question the propriety of giving any single class of shippers or any single industry first claim on any reduction," said Mr. Callbreath. "Producers of basic commodities should have equal opportunity to benefit by reductions. Will reduction in grain rates compel shippers of other commodities to bear a relatively greater burden? It would seem pertinent to inquire whether or not such reductions would tend to prevent needed reductions in rates on other commodities, especially those low-grade basic commodities which constitute the beginnings of all traffic, such as ores, sand, gravel, stone, clay, crude petroleum, logs, and pulp wood."

The Mining Congress takes the position that rates on agricultural products bear a definite relationship to the entire rate structure, which would be disturbed by readjustment of grain rates alone. It urges the commission to include in its investigation the rates on all basic commodities and that all raw materials be given first consideration in the matter of reductions. The commission is also asked to ascertain if products of manufacture and other traffic taking higher rates than basic raw materials shall bear a relatively greater portion of the aggregate transportation burden. "If the stimulation of movement of basic raw materials, as the result of rate reductions, would tend to lower the cost of manufactured articles and finished products to the consumer, increase building and construction, lower cost of railroad supplies, materials and equipment manufactured or derived from basic raw materials, or increase freight tonnage, both actually and potentially, such stimulation would be in the interest of the carriers and the public," Mr. Callbreath added.

The Interstate Commerce Commission will not make a general investigation into freight rates on basic commodities. In reply to such proposals made by the American Mining Congress, the National League of Commission Merchants and the Western Fruit Jobbers' Association of America, the commission in a letter made public Wednesday stated that it could not see its way clear to undertake such a broad inquiry at this time.

The commission, however, did order on Wednesday that hay should be included in the grain and grain products rates investigation, and assigned the proceeding for hearing on the following dates:

The St. Gotthard Railway Along Lake Lucerne

Railroads Adopt New Transportation Program

Many Records Established in 1923 But Continued Progress Requires Large Capital Expenditures and Fair Return

A NEW PROGRAM for continuing, during the coming year, the efforts of the railroads to increase transportation facilities and the active co-operation of the railroad managements and the public in the intensive efforts to provide adequate transportation which have made possible the handling of a record freight traffic in 1923, with practically no car shortage, was adopted by the railroads at meetings of the member roads of the American Railway Association and the Association of Railway Executives in New York on November 8. The executives of 94 railroads having a total mileage of 219,077, or 95 per cent of the total Class I railroad mileage, were present.

Statistics were made public which show that record-breaking expenditures for equipment and other facilities and for materials and supplies have been made in 1923.

The capital expenditures made for equipment and permanent improvements, according to reports received at the meeting from the individual railroads, totaled $429,272,836 in 1922 and will total in 1923 $1,059,440,000. In addition there will be carried over into 1924 appropriations made this year for similar capital expenditures amounting to $243,804,000, making a grand total of $1,732,516,836 expended or authorized for capital improvements during 1922 and 1923. This does not include appropriations which will be made in budgets for next year which still remain to be adopted by the individual railroads. It is too early at this date to anticipate what the total capital expenditures for 1924 will be.

In addition to the above capital expenditures for increasing their facilities, made almost entirely from borrowed money upon which the going rate of interest must be paid, Class I railroads will in the entire year 1923 expend for fuel, for materials, and supplies used in current operation and maintenance, approximately $1,800,000,000. This is based on the actual expenditures for nine months and the estimated expenditures for three months only. In 1922 operating expenditures for this purpose totaled $1,668,573,271.

The capital expenditures in 1923 for increasing facilities, plus the expenditures for 1923 for fuel and for materials and supplies used in current operation and maintenance, total $3,103,244,000. This does not include any direct expenditures by the railroads for labor, but has gone to the industries of this country and represents one of the major causes contributing to the expansion of business and to the employment of industrial labor, which, in turn, has been a primary factor in the increase in domestic demand for both products of industry and of the farm.

The program agreed upon is as follows:

"In order to further improve transportation conditions and to make the best practicable provision to meet the transportation requirements as they develop, the following principles be adopted by the railroads as a continuing policy and working program:

"1. That there be a continuation of the intensive efforts of the railroads to reduce the percentage of locomotives and cars awaiting repair and maintain it at the lowest possible minimum consistent with the volume of business offered and the revenues which the railroads are permitted to earn.

"2. That there be increased supervision on the part of the railroads and greater co-operation with shippers to bring about better utilization of car capacity.

"3. That there be continued the intensive effort to increase the average daily movement per freight car in an endeavor to make new records of achievement in the prompt movement of traffic.

"4. Continued study and consideration of the possibility of greater joint use of facilities.

"5. That there be a continuation of the complete co-operation of the railroads in carrying out the directions of the Car Service Division of the American Railway Association.

"6. That active support be given by the railroads to all phases of the work of the Regional Shippers' Advisory Boards that have been organized by the public in various parts of the country to work with the Car Service Division of the American Railway Association for the purpose of effecting the greatest possible co-operation between the public and the railroads in dealing with car service and transportation matters of mutual interest."

After referring to the successful performance of the railroads in carrying out the program unanimously adopted by them last April to render the public adequate transportation service, attention was called to the fact that this was made possible only by the large capital expenditures which must continue in the future if the railroads are to keep pace with the constantly increasing commerce of the country. The resolutions in which the program of future action by the railroads was adopted say:

"Calling attention to the large capital expenditures made in 1923 for equipment and other transportation facilities, almost entirely made from borrowed money, and to the necessity in the public interest of the continuation of similar expenditures in the future if the needs of the constantly growing commerce of the country are to be met, the railroads reaffirm their faith that the American people, the agencies of the government, state and national, who have the final voice in controlling railroad revenues and expenses, recognize that the continuation of an adequate program for transportation service depends upon such net income to the railroads as will permit a fair return upon the property now devoted to the public service and will make it possible to secure new capital which is imperatively needed.

"Notwithstanding the unprecedented volume of traffic successfully handled this year, the railroads have not earned even the moderate net return contemplated."

New Records Established in 1923

At least eight new records in transportation service to the public have been made by the railroads this year according to a report adopted on November 7 by the board of directors of the American Railway Association and presented at a meeting of the association on the following day. These records are as follows:

(1) They put in service from January 1 to October 1, 134,636 new freight cars and 2,963 new locomotives—a larger number than in any similar period during the last ten years. From January 1, 1922 to October 1, 1923, the number of new freight cars put in service was 220,986 and the number of new locomotives was 4,342. The number of locomotives still on order with the builders on October 1 was 1,242, and the number of freight cars 64,601.

(2) A larger number of locomotives and cars have been repaired and put in serviceable condition than ever before in any equal period. On October 1, the number of freight cars awaiting heavy repairs was only 5.4 per cent of the total number and the total of locomotives awaiting heavy repairs

was only 13.7 per cent. This figure for locomotives was the lowest figure on record.

(3) The railroads handled more freight business between January 1 and October 20, than in any corresponding previous period. The number of cars loaded with revenue freight was 40,545,920. This compares with 34,220,426 in 1922, an increase of 18 per cent; and with 36,827,588 in 1920, the previous record year, or an increase of 10 per cent. The number of cars loaded with the following classes of commodities, has exceeded the records of all previous years: Live stock, forest products and merchandise and miscellaneous freight, which includes manufactured products.

The box car surplus in the grain producing states has been the greatest in history.

(4) The average miles moved by each freight car daily in the first nine months of the year was 27.6 miles, and in September reached 29.2 miles. This compares with 22.5 miles in the first nine months of 1922, 22 miles in 1921, and 24.5 in 1920.

(5) Because of these increases in facilities resulting in the more rapid movement of cars a record-breaking business was handled without congestion and with practically no car shortage or embargoes for the first time in years.

(6) The amount of freight service rendered with each car was 511 tons carried one mile daily during eight months of 1923, which exceeds the record of any previous year, and surpasses that of 1922 by over 31 per cent.

(7) From January 1 to October 1, the number of tons of coal dumped at Lake Erie ports for movement by boat to the Northwest was 23,268,635 tons. The program of providing coal for the Northwest was completed much earlier than in any previous year, thereby making available additional locomotives and cars for other commercial interests during the fall and winter months.

(8) A greater amount of railroad coal has been placed in stock-pile storage than was ever heretofore stored by the railroads, thereby making available additional locomotives and cars for general commercial service during the fall and winter months. The amount of coal in railroad stock-piles on October 1 was 15,605,415 tons.

In the face of these statements of unexcelled performance, the fact should be emphasized that the railroads of the country even from this immense volume of traffic and for this unexampled transportation service to the public, have not been able to earn even the modest fair return fixed by the Interstate Commerce Commission.

The report also shows that of the proposed Shippers' Regional Advisory Boards, seven have organized and have commenced operations during the present year. The purpose of these boards is to bring together all of the important shipping interest, including the farmers, of each part of the United States; together with the railroads serving it, for the purpose of developing in advance the probable transportation demands of each region and the most equitable and satisfactory means of satisfying that demand. Each of these boards functions around a local district manager of the Car Service Division of the American Railway Association. The boards so far organized are:

The North Western, with headquarters at Minneapolis, covering the states of Montana, North Dakota, South Dakota, Minnesota and northern Wisconsin.

The Central Western, with headquarters at Omaha, covering the states of Idaho, Utah, Colorado, Wyoming and Nebraska.

The Trans-Missouri-Kansas, with headquarters at Kansas City, covering the states of Missouri, Kansas, northern Oklahoma and northern Arkansas.

The South Western, with headquarters at Dallas, Texas, covering the states of Arizona, New Mexico, Texas, western Louisiana, southern Oklahoma and southern Arkansas.

The South Eastern, with headquarters at Birmingham, covering the states of Florida, Georgia, Alabama, eastern Louisiana, Mississippi, Tennessee, South Carolina and North Carolina.

The Great Lakes, with headquarters at Toledo, covering the states of Michigan, northern Ohio, northwestern Pennsylvania, Buffalo and the Niagara Frontier.

The Ohio Valley, with headquarters at Cincinnati, covering the states of West Virginia, Central and southern Ohio, Indiana and Kentucky.

It is planned to organize promptly boards as follows:

The New England Board, with headquarters at Boston, covering the New England states.

The Middle Atlantic Coast Board, with headquarters at New York, covering eastern Pennsylvania, New Jersey, Delaware and New York state.

The Allegheny Board, with headquarters at Pittsburgh, covering the states of western Pennsylvania and eastern Ohio.

The Iowa-Illinois-Wisconsin Board, with headquarters at Chicago, covering the states of southern Wisconsin, Iowa and Illinois, including the Chicago switching district to Laport, Indiana.

The boards in the other sections of the country, such as California and the North Pacific Coast will be organized as desired by the shippers.

At the annual meeting of the Association of Railway Executives the activities of the association during the past year were reviewed and an executive committee to serve for the ensuing year was elected, Sir Henry W. Thornton, of the Canadian National, being added as a new member, and President J. J. Bernet, of the New York, Chicago & St. Louis, being elected to succeed W. L. Ross. The other members were re-elected. Hale Holden, president of the Chicago, Burlington & Quincy, was re-elected chairman of the executive committee.

The program to provide adequate transportation service in 1923-24, presented by the American Railway Association, was considered and approved.

A resolution was passed to establish in the name of the association, but by voluntary contributions, a chair of transportation at Yale University in honor of the late Thomas De Witt Cuyler, who, in his capacity as chairman of the association, rendered for more than four years service of exceptional value, declining any compensation whatever therefor.

One of the Exhibit Cars on the New York Central Service-Progress Special

Railway Business Association Meets in New York

Julius Kruttschnitt and President Howard of Transportation Institute Address Meeting

ADEQUACY of further trial of the Transportation Act and opposition to amendment of that act were two important points brought out at the annual meeting and annual dinner of the Railway Business Association, held at the Hotel Commodore on November 8. The speakers at the dinner were Julius Kruttschnitt, chairman of the executive committee of the Southern Pacific, and James R. Howard, president of the recently organized National Transportation Institute. Mr. Kruttschnitt discussed the question of further trial of the present law relating to railroads versus amendment of that law. Mr. Howard dwelt upon the necessity of the farmer and the transportation interests meeting on common ground and explained in some detail the purposes of the Transportation Institute and the program which it had adopted with that end in view. Another question given considerable attention at the annual meeting on Thursday morning was that of stability of railway purchases.

Mr. Kruttschnitt in his address sketched the progress made by the railroads since the passage of the Transportation Act. He pointed out that the railroads had experienced abnormal conditions in the period since the termination of federal control up to the beginning of the present year. It was his view that the remarkable progress accomplished by the railroads during the present year—the first normal year since the passage of the act—was an indication of what might be expected of the railways in the future and a promise that the country could expect proper transportation service if the railways were allowed to work out their problem without change in the law which at present covers their actions. Mr. Kruttschnitt's paper is presented practically in full in another column of the present issue of the *Railway Age*.

The annual dinner was attended by about 1,200 members and guests of the Railway Business Association. Alba B. Johnson, president of the association, presided.

"The purpose of the National Transportation Institute," said Mr. Howard, "is to promote understanding through the ascertaining of essential facts of Transportation—to study the correlation of the different kinds of transport, the relationship of transportation to industry as a whole, and the translating of these facts from the usual economic or technical verbiage to the understanding of the men on the field or on the street." An abstract of Mr. Howard's paper follows:

The Farmer's Interest in Efficient Transportation

It is always a good thing for us to get acquainted with our neighbors, because we are sure to like them if we do. I am a cornbelt farmer. You represent various industrial, transportation and financial interests. We ought to—and must—get acquainted, because we are neighbors; and the circumstances of a new era—another epoch—of American life compel us to live closer together than formerly.

The foundation of America from the very beginning was agriculture. When our first census was taken we had 5,000,000 people, all along the Atlantic seaboard; 90 per cent were rural. Westward from the crest of the Alleghanies lay the world's richest agricultural lands—a great public domain beckoning the oncoming settler. With the passing of a century all this great domain within the rain-belt was in the hands of the farmer. The nineteenth century march of the farmer from New England hills, across the great Mississippi valley, over the Rockies to the Pacific, is the drama of the ages.

During that century we had one definite outstanding national policy, though it may not have been expressed by party plank or national statute. This policy was to settle the land and make it produce. Witness the early wholesaling of land settlement rights, the pre-emption act, the homestead laws. During the century the sale of public lands was always a check to any deficit in our national treasury. The greatest single decade of land settlement was from 1860 to 1870, when our tillable acres increased 51 per cent. The increase of the next decade was 26 per cent and the next 16 per cent—while the increase during the first decade of the present century was negligible.

The point which marks the advent of a new epoch in American history is the passing of the last of the productive public domain into the hands of the farmer. Then pioneering ceased and permanent building began. This is just as true of all other industries as of agriculture.

There is no exact date of the new era, but 1900 is approximate. There were some preceding evidences. The rubbing of elbows resulted in 1887, in the creation of the Interstate Commerce Commission and in 1890 in the Sherman anti-trust law, to be supplemented in 1913, by the Federal Trade Commission and Clayton acts. The act committing the federal government to a reclamation policy in 1903 was a very definite acknowledgment of a new order of things. None of these acts was necessary in the days of territorial expansion. They are buffers between pioneering and permanent building, made necessary because men do not recognize the demands for understanding, co-operation and adaptation which came with the changing order. It is to be hoped that occasions like this may create that good will born of understanding which will not only make further similar restraints unnecessary, but render obsolete those we have.

"Upon You the Farmer Has His Eye"

In this audience are represented the men who develop and fabricate mechanical appliances for railways, the men who buy and use them and the bankers who finance them. Together it is those three groups with their armies of employees who perform the railway transportation function. Upon you the farmer has his eye. In his own business the farmer has grappled with the problem of reduced factors in operating cost. He has availed himself of new machinery. He has increased the output per man engaged. A smaller number of men on farms have attained larger total production. This process of production cutting cost is always on his mind. He thinks of it, not only in his own work, but in the work of those whose product or services he buys. He has occasion sometimes to complain that the commodities which he consumes cost him more bushels of grain than he can pay and show an annual profit. Usually he has no remedy for the price of commodities except the buyers' strike, which is not a real remedy, since reduction in consumption generally increases the production cost of the commodities and in the long run raises instead of lowering the price. Just because commodity prices are beyond his remedy, the farmer seizes

upon any factor in his own cost over which there is a way to exercise control, and, of course, the outstanding target is railway rates which are regulated by the Government.

The farmer closely watches operating cost of our railways. He insists that they shall be honestly, efficiently and economically managed, as set forth in the Transportation Act. Thinking of his own experience with the installation of mechanical improvements, he asks whether the railways are taking advantage with reasonable rapidity of opportunities for mechanical progress.

I suspect that neither farmers nor any other men of affiairs are fully aware of the great part played by mechanical progress in past and present. Witness the transition from the old walking plow of the '80s to the tractor drawn gang of today, or, the evolution from the cradle and flail to combined machine that cuts, threshes and bags wheat at a single operation. It will hurt none of us to browse around now and then in the museums gaping at the photographs of locomotives and cars of an earlier day. The comparison with the newest vehicles is striking enough. The average train load, which you gentlemen regard as the key to economical operation, rose from 1890, when it was 175 tons, to 1923, when during the first eight months it was 716 tons, or, an increase of more than 300 per cent. It would be carrying coals to Newcastle for a dirt farmer to catalog before this audience the scientific advance in every direction which has been the basis of that marvelous result—improvements in the design and material of locomotives and cars, of track appliances and signals, of shop equipment; and the reconstruction of road and bridges, straightening of line and reduction of grade. The pouring of millions upon millions of capital into improvements such as these has enabled our railways to meet a steadily rising wage scale and mounting taxes, furnish the most satisfactory service in the world, and stave off until 1910 any movement for general advances in their freight rates. They have overcome before, during and since the war, tendencies towards higher costs in other directions, and have survived on a rate level under which the business of the country has moved in record volume.

Some Aspects of Recent Railway Efficiency

Some aspects of railway efficiency during 1922 and 1923 are most encouraging. Emerging broken and demoralized from federal control in 1920, and weakened from the depression of 1921, the roads on January 1, 1922, owned freight cars aggregating 2,328,276. In the next 21 months, ended October 1, 1923, they scrapped 239,333 cars and installed new 211,857, leaving them October 1 with 27,476 less freight cars than at the beginning of 1922. Locomotives owned January 1, 1922, were 64,985, those scrapped in 21 months were 4,641, and new ones installed 4,342, leaving those owned October 1, 1923, 64,686, or 299 fewer than at the beginning of the period. Yet that smaller number of locomotives and cars has been hauling promptly and well a vastly larger number of carloads than in any previous year, and the present gross car surplus is twice as great as the present gross car shortage.

What did it? For one thing, the cars and locomotives scrapped are the oldest and smallest, while those installed are the newest and largest, so that the pounds of tractive power and the tons of car capacity added by new installation is larger than that of the same number of units scrapped. But another factor is more important. The roads have been making greater use of the rolling stock they possess. With the aid of shippers they have increased the car miles per day and the tons per car. Above all, they have made repairs. The most significant item in this table is this—that on January 1, 1922, the freight cars in good order were 2,015,086, and on October 1, 1923, they were 2,149,468, or, an increase of 134,382. Locomotives in good order increased from 49,602, January 1, 1922, to 54,863 on October 1, last, an increase of 5,261. So that with 27,476 fewer cars at the end of the 21 months there were 134,382 more in good order, while with 299 fewer locomotives there were 5,261 more in good order.

This astonishing story means that the railway managers and the railway employees have gone back to the proper functions of railroading. Dare I suggest that we have also had the first material congressional vacation in a dozen years?

I say gone back to railroading. What I have in mind, of course, is that during this year at least the manager and the men have labored together in harmony on their primary job. So far as the farmers are concerned, you may be sure that such a spectacle is medicine for sore eyes. We do not begrudge good wages or good salaries on the railroads so long as they are giving good transportation. Our hearty support and practical co-operation in maintaining that situation at all times may be depended upon.

Farmers Expect Progress to Continue Vigorously

But the farmers also expect that mechanical and managerial progress will continue vigorously. We are asked to pay higher freight rates than those to which we have been accustomed. We are told that the increased railway income is necessary in order to attract capital for just such improvements. What the thoughtful farmer has in mind is reduction in railway operating costs. Therein he sees the only hope for ultimate rate reduction which he demands. He is thinking of the improvements most obvious to him, such as hydro-electric power; but he is coming to know, and I promise you he will increasingly know, something about the more intensive progress in every branch of transportation science. To you gentlemen the confidence and good will of the farmers is vital. You hope they will be patient about rates. You invite their co-operation for a respite from railway legislation. Towards both those problems the attitude of agriculture will be profoundly affected if the farmers are convinced that the strengthened credit arising from the higher rates is to be used in devoting capital to improvements in economy.

You men, each group in your own field, have engineering problems of consequence to all people living and to come. Your occupation is very much more than business. It is service to the nation. Each generation can measure its contribution to the general welfare by its elevation of the standards of living. The rise in the standards of living is limited by the development of the mechanism for taking things from where they are to where they are wanted. Transportation, if you please, is the yard-stick which measures the living standards and material progress of every nation. You manufacturers with your laboratories and your inventors, you railway managers who test and judge and adopt or adapt what is new and good, you bankers who mobilize the capital will deserve well of your country in the degree that the carrying machine or transportation facilities that you hand on to those who come after you is a better machine than the one which was handed on to you. Working in that spirit and letting the people understand that this is your spirit you can command all the public support you require. Some people do not understand transportation. Many do not understand the Transportation Act. Nothing will help them more to grasp both than to hear constantly about your concerted efforts to improve the transportation plant.

I have called attention to the fact that pioneering in land settlement, industry and transport building had merged into an era of permanency. We are still pioneering, however, in that most essential field of understanding and co-operation. Most men only vaguely realize their interdependence with other men, or, the dependence of every industry on every other. The rubbing of elbows is usually annoying among strangers; seldom where there is recognition of mutual interests and neighborly friendliness.

I have pointed out that transportation, and I have in mind

all forms, while most essential to every human advancement is not fully understood or appreciated. Truth is, we, the people, have come to consider transportation almost as much a matter of fact as air or water, and it is only the elbowing of the new epoch that is beginning to arouse us to our obligations and responsibilities. We realize but faintly that past achievements in every line without transportation would have been impossible, and that upon transportation all future progress depends.

The scope of these problems and the mutual interest of all industries and the public made it essential that we have a better understanding of transportation problems. The National Transportation Institute was founded to aid in getting the facts about transportation and giving this information to the public.

The plan for creating an Institute for Research in all the fields of transportation was evolved upon the recommendation of the Congressional Joint Commission of Agricultural Inquiry to meet the need for an independent and non-political investigating body. The Research Council of the National Transportation Institute is composed of the most eminent investigators and economists in the United States.

Men prominent in many fields of commerce and industry, including agriculture, banking and insurance, forestry, labor, manufacturing, public utilities, trade, mining, highway, waterway and railway transportation, are co-operating in building the institute. The degree of success that may attend the activities of the National Transportation Institute will depend largely upon the recognition accorded it by the public and by the business, agriculture and industry of the country.

Report of Legislative Committee

The report of the legislative committee presented at the annual meeting of the Railway Business Association on Thursday morning dealt chiefly with the work done by the association to further the view that the Transportation Act should remain unamended. The report was presented by the chairman, A. H. Mulliken, president of the Pettibone-Mulliken Company, Chicago.

An abstract of the report follows:

"The first plank favored further trial of the Transportation Act unamended. During the year the accomplishment of that purpose has chiefly occupied the energies of the association. In the Congress which expired in March only one bill of amendments was seriously pressed—the so-called Capper Bill. This would have repealed the section which contains the rate-making rule aimed at adequate railway income. That proposal was intended to placate the large number of shippers who had been misled into the belief that the section carries some sort of guarantee of railway income. Besides those who erroneously interpreted the section in that respect many others demanded its repeal or amendment on the frank ground that its tendency was to increase rates, and they wanted lower rates whatever the consequences. The other feature of the Capper Bill would have restored state control over intrastate rates and intrastate car distribution. From our point of view federal control of all rates, interstate and intrastate, is an essential adjunct to the rule of adequate income. Shippers who urge limitation of federal control desire lower rates. Each of them thinks rates in his own state will be lower if a state body regulates them without federal review. Shippers also complained that the Interstate Commerce Commission was too far removed from them, that relief was costly and slow; and that the work was done by commissioners too little familiar with local conditions or by examiners who at best were subordinates. More prominent than shippers in urging state control were the state public utility and railroad commissioners. Both repeal or amendment of the rate-making rule and limitation of federal control were earnestly urged by the farm organizations. Upon the transfer of Senator Kenyon to the bench, Senator Capper, author of the bill, succeeded him as chairman of the farm bloc, which had the measure on its program.

Neither of these amendments made progress.

Car Distribution

So far as concerned car distribution, a few minutes' conference with any farm representative was usually enough to convince him that the farmer's only possible hope of having cars mobilized at his point of seasonal need is to bring them across state lines and that cars can only be ordered out of another state into his own by a federal authority. They quickly understood that car supply is national, that the Car Service Commission maintained by the railroads is national, and that the authority of the Car Service Commission over the roads rests upon the power of the Interstate Commerce Commission to require compliance.

Intrastate Rates

In the matter of intrastate rates a solution seems to have been found without new legislation. Under the Act as it stands the Interstate Commerce Commission is authorized to arrange co-ordination between itself and the state authorities. There was some delay in bringing this provision to a satisfactory basis, but by the middle of last winter co-operation had been established, and there is reason to hope that the agitation of the State Commissioners for this amendment will prove to have ceased, and with it the pressure from others who under their leadership have heretofore worked for state control.

Rule of Rate Making

On the rate-making rule abandonment of efforts at repeal or modification was much less complete. Parliamentary complications prevented its advancing toward serious consideration in Congress, but when that body adjourned the leaders in congress gave little sign of having observed a change in sentiment at the West and South. Some of the farm organizations refrained last winter from explicitly reiterating their demand for repeal or their description of the rule as a guarantee, but in the spring a number of the industrial traffic associations reaffirmed legislative programs urging a new rate rule which would make the statutory instruction less definite. During the winter a new bloc of the so-called progressives was formed. A number of its members had been active proponents of the Plumb plan or other schemes for government ownership. They advocated in various forms the scaling down of railway valuation as a basis for rate-fixing and a constitutional amendment which would deprive security holders of the right to have the law pronounced void by the Court. Many experienced legislators predicted that public sentiment as understood by them made inevitable radical amendments in the coming Congress.

Congress had not taken a long recess in 12 years. Presidents Harding and Coolidge having resisted all pressure to call an extra session, such a recess has now occurred, and in this interval the whole outlook has changed. Many senators and representatives visiting Europe have had opportunity to compare American and foreign railroads and to learn about the stampede of European countries to relinquish government lines to private operation. Many more have sojourned at home and heard the domestic news. The news was not good for radicals, but it was good for business and good for agriculture. What they heard was that the railroads were

scoring enormous traffic records, giving better service and by their vast purchases sustaining national prosperity.

On April 5, the American Railway Association announced its billion and a half dollar capital program for 1923, with an appeal to the shipping and general public for co-operation in the performance of the task ahead. The Railway Business Association made that campaign its text. Under the title "Meeting the 1923 Peak" we issued a series of bulletins. This was a call for all hands to join in and help. Accompanying the leaflet was a return postcard upon which the signer declared that the primary concern was good transportation, and the essential to this a further trial of the Transportation Act without amendment. Every card signer received a letter telling him what we knew about public and political opinion in his region and asking him for specified co-operation. About 2,000 individual citizens responded to this appeal. They came from many occupations in every state. Associations promptly and heartily co-operating included these in many centers previously noted for discontent with the railroad situation. Many associations assigned the subject to standing or special committees for study, for conclusions, and for action. It was clear a great change had come over public opinion. Except in isolated regions having special problems, public men advocating amendments which would weaken the roads were faced with an obstacle that left them helpless. Good service had whetted public desire for more good service. Citizens and organizations instead of wishing to break the railways down in order to take them over wanted nothing so much as to keep them going as they were and enjoy the benefits.

A Legislative Holiday

Such was the atmosphere in which we were enabled to gain the attentive ear of citizens and communities and their understanding of our proposal for a legislative holiday. In town after town and on many a country-side the advocate of amendments hears the challenge: "No necessity now;" and he cannot prove necessity—none exists.

For a time there was anxiety because some influential conservative leaders favored opening the process of amendment by pressing a bill to make consolidation compulsory. Conversely, weighty groups were demanding amendments to give the roads even wider freedom as to consolidation than that contemplated under the existing permissive provision. At both extremes there is now evident a tendency to yield, and we hope and believe the consolidation problem will be postponed with everything else.

The Labor Provisions

Much discussion has focussed upon the labor clauses. Here again we find two extremes. On one side are those who would like to abolish the Labor Board, on the other those who seek to make its decrees obligatory. Not only is there the prospect of a deadlock amid views so conflicting, but interest in the labor clauses has waned as the roads have developed company autonomy. The business pending before the Labor Board has shrunken substantially in quantity and in kind.

To Washington next month senators and representatives will return aware that in their states and districts there is organized and militant sentiment for a legislative respite during which the railway managers and their forces can devote themselves to transportation and that the people can enjoy the good railway service and the prosperity which they now have without risks from experiment or tinkering.

Besides the railroad problem the Association has dealt with certain other questions. We have urged reduction in the income surtax rates and opposed a soldiers' bonus. No such reduction has been made, and it is too soon to say that a bonus can be defeated. We have also discussed immigration —urging a quality instead of a quantity standard, and a selective method. The best that could be done in the last Congress was to prevent a tightening of the quantity limits. Our reports indicate that public opinion has undergone some change, but strong effort is still required.

Stability of Railway Purchases

Discussion of this subject at the annual meeting originated in the report of the committee on stability of railway purchases. The report said:

Stability of railway purchases is before us at the present time principally in three aspects.

First is the immediate problem of the coming months—the policy which the supply industry should encourage the railways to pursue in the transition period.

So far as concerns the maintenance and capital needs of any railroad for 1924 advice from any external quarter can have little value. That is a matter for its officers and directors to estimate. Investment support for a capital program will depend upon the view of such program taken by those who are invited to float securities. What has been brought up for discussion between supply manufacturers and the railway officers is that once needs have been estimated and financial resources ascertained, ordering of equipment, appliances, material and supplies should in general be as far in advance as possible with delivery specified as required. This will benefit not only the manufacturers and their employees by enabling the mills to operate continuously, but the railways also through the traffic and earnings which they will continue to enjoy arising from purchases by the supply concerns and individual consumption in the communities where their payrolls are spent.

The Legislative Aspect

A second aspect is the legislative. The railways can never fully reach stability of purchases until the period for which excess income is computed for recapture under the Transportation Act has been made longer than one year as it now stands. We do well from time to time to remind the public of this phase, but as our association is urging postponement of all amendments whatever, the time for action on this improvement in the law has not come.

The Business Cycle

During the past year a third aspect which has attained a serious and gratifying stage is public discussion of periodical unemployment of labor and other evils due to excessive booms and slumps. Your committee early called attention to the advantage our movement for stability might obtain if we could give and take co-operation with other groups similarly situated—those whose distress would be alleviated if in time of depression the market were entered by great buying interests with reserve financial resources established for that purpose. We have mentioned the federal, state, county and city governments, public utilities and private concerns building large works. It was our thought that if all the elements concerned in stability as a general problem would join in its study this would accelerate and intensify an understanding of stability in railway purchases and win us many valuable allies.

A great step in that direction has been taken.

Following the president's conference on unemployment in the fall of 1921, a Committee on Unemployment and Business Cycles was appointed by Secretary of Commerce Hoover. The committee included two manufacturers, both officers of companies enrolled in our association—the chairman, Owen D. Young, chairman of the General Electric Company, and Clarence M. Wooley, president of the American Radiator

Co., and their colleagues were Joseph H. Defrees, attorney of Chicago, president, when appointed, of the Chamber of Commerce of the United States; Mary Van Kleck, of the Russell Sage Foundation; Matthew Woll, vice-president of the American Federation of Labor, and Edward Eyre Hunt, secretary.

The Department of Commerce in a 30-page pamphlet has just reprinted the committee's report from a volume of 400 pages, "Business Cycles and Unemployment," published earlier in the year. The committee makes recommendations and proposes questions "for discussion and comment by such groups as may desire to co-operate with the committee."

In response to this invitation it may be said in the first place that those ladies and gentlemen who have been called into activity by Mr. Hoover have created a literature of the general subject, laid down the lines of discussion and made an impressive beginning in the conveyance of pertinent knowledge to the country; but in the second place that those who framed the recommendations before us are still very far from accepting the significance which our association ascribes to railway purchases as a factor in general booms and slumps, or pointing out the remedy.

Railways a Large Factor

In the larger work is a report prepared for the committee by the National Bureau of Economic Research under the direction of Prof. Wesley C. Mitchell. A chapter on "Stability of Railway Operations" is the work of Julius H. Parmelee, director of the Bureau of Railway Economics. Dr. Parmelee impressively justifies the claim that as buyers and employers the railways bulk one of the largest factors. They employ in normal times, he says, 2,000,000 men and women, spend annually $3,000,000,000 for wages and more than $1,500,000,000 for supplies in operating expenses alone. In addition they spend annually large sums on capital account for additions, betterments and improvements to the physical plant. Adding together the 2,000,000 men employed by the railways under normal conditions and the more than 2,000,000 men estimated as engaged in supplying their equipment and materials, we have a total of 4,000,000 men directly or indirectly depending for their livelihood on the railway industry. This is approximately 10 per cent of the total number of persons reported by the Census Bureau as gainfully employed in the United States in 1920. The railways, this authority estimates from cited data, purchase directly one-quarter of the output of coal in the United States and one-ninth of the total petroleum production; directly and indirectly about 30 per cent of the iron and steel output, at least 25 per cent of the lumber produced, a considerable but indeterminable percentage of the copper and brass output, and small percentages of many other products. This omits such second-hand railway consumption as coal used by the iron and steel mills in producing railway steel.

Quoting various authorities as having observed that fluctuations in the railway supply industry are exceptionally excessive and their effects severe through unemployment, Dr. Parmelee puts his finger on the cause. "In time of low traffic and reduced earnings," he says, "everything tends toward the cutting down of new construction and improvement work, as well as maintenance of way and equipment. The prime question is that of adequate and continuous credit." He mentions various obstacles to long-range planning, such as defects in the required system of accounting and the attitude of regulatory commission toward the policy of building up maintenance or other reserves, especially as related to the "recapture clause" of the Transportation Act; but behind all the other factors entering into credit is "the small return upon the value of their property which the railways have had for years." This, he points out, "has made it difficult either to lay down or to carry out a long-range program."

With such a statement before it, formulating recommendations respecting purchases by public utilities, the committee states that so far as railroads are concerned short net earnings in peak times of high wages and prices tend naturally to curtail construction.

For increase of business stability it is quite as vital that the railroads buy strongly in time of unemployment as that they moderate their purchases at peaks. To do so they must have accumulated reserves, which presupposes sufficient net earnings in busy years for the purpose; and they must be given faith to believe that the government will be indefinitely steadfast in a rate policy of encouragement. We urge the Committee on Unemployment and Business Cycles to find occasion for giving the weight of their influence to a public statement emphasizing soundness and stability of government policy affecting railway income as an indispensable requisite to stability of railway purchases and hence to general stability.

Resolutions

The annual meeting adopted resolutions as follows:

I

Our railroads are giving the best service in their history. Throughout the industry and trade railway purchases of equipment, material and supplies have spread a consumers' buying power which has sustained the business recovery, restoring employment to labor and strengthening the domestic market for farm products. The national prosperity is measured in freight movement vastly exceeding all previous records. To keep prosperity and to provide facilities to carry the consequent increments of traffic, the railways must continue their replacements, additions and betterments. If they are to continue, they must be permitted to retain the condition which has enabled them to do what they have done. That condition is co-operation. Shippers have aided in fuller use of equipment. Tons per car and car-miles per day should rise toward a new goal. Investors have shown their faith in the managers and in the government by taking in two years nearly a billion and a half of securities. They should be encouraged to invest in more roads and to take stock as well as bonds and notes. Individuals and associations in every walk and in every State, appreciating service and prosperity, deprecate radical agitation, to the end that the railways may continue to use all their energies in building up and operating their properties. Their united voice can win wider concurrence in that demand. We welcome the declaration of many senators and representatives that they are opposed to legislative experiment affecting railways and are aware of no amendment of the Transportation Act which is urgently necessary at this time. This attitude is encouraging to investors. We urge all advocates of ultimate changes in the act to join us in postponing their proposals.

II

Current experience has demolished the theory that on freight rates designed to yield the roads income sufficient for adequate facilities and service the nation's business would not move. On rates fixed by the Interstate Commerce Commission under the Transportation Act amazing new traffic totals have embraced every class of freight and every commodity. The region where reductions are now most discussed is the Northwest, where through previous cuts since 1920 the rates and (excepting New England) railway net income are the lowest. The factor which cannot be escaped is operating cost. Wage increases, the Adamson Law and numerous physical and service causes of expense are outside the managers' control. Off-setting these are economies

through labor-saving mechanical progress. Modern equipment is essential for the farm, the mine and the factory. It is equally essential for the railway. Such progress will proceed only so far on any railroad as capital flows in for experiment and installation. Arrearages in this respect have accumulated for 20 years. To complete the cycle of needs and fully modernize the plant as a whole we must have a prolonged era of good gross and net earnings. Shippers interested in lower railway operating cost can promote that tendency by supporting the Interstate Commerce Commission in the rate policy prescribed by law, aimed at sufficiency and stability of earnings.

III

Conviction steadily spreads that stability of industrial employment and hence stability of national prosperity are profoundly affected by continuity of railway purchases. When amendments become timely we shall favor a provision in the Transportation Act authorizing deferred maintenance in good years to be made in years not so good. Meantime under the present limitations, in order that industrial employers may operate without interruption, we suggest to the railways that so far as they can forecast requirements and possess the necessary resources they place their orders well in advance of delivery.

IV

Investors' confidence in railway securities is largely based upon faith in the policy of the government. An essential element in that policy and in their confidence is delegation of rate regulation to an administrative body charged with responsibility for results in total earnings. Whatever tends to strengthen the independence of the Interstate Commerce Commission increases the courage of investors. We earnestly urge shippers and others in rate adjustments to refrain from public agitation and from efforts to enlist officers in the executive department of the government and members of Congress for the exertion of pressure upon the commission or upon the railroads. We recommend that the regulation of rates be dealt with in orderly procedure and that the commission and the parties, including the carriers, be accorded the respect appropriate to participation in a judicial function.

V

The secretary of the treasury has renewed his advice that lower income surtax rates would produce larger revenue, beside checking the diversion of investment capital into tax-free securities of our various government units. Resistance to this salutary measure is apparently due to the still widespread fallacy that any increase in taxation upon large incomes benefits those having small incomes. The contrary is the fact. Correction of the tax law in this respect would yield capital for industry, agriculture and transportation, thus at once enlarging employment for labor and by increase of production lowering the cost of living. We favor lower income surtaxes.

VI

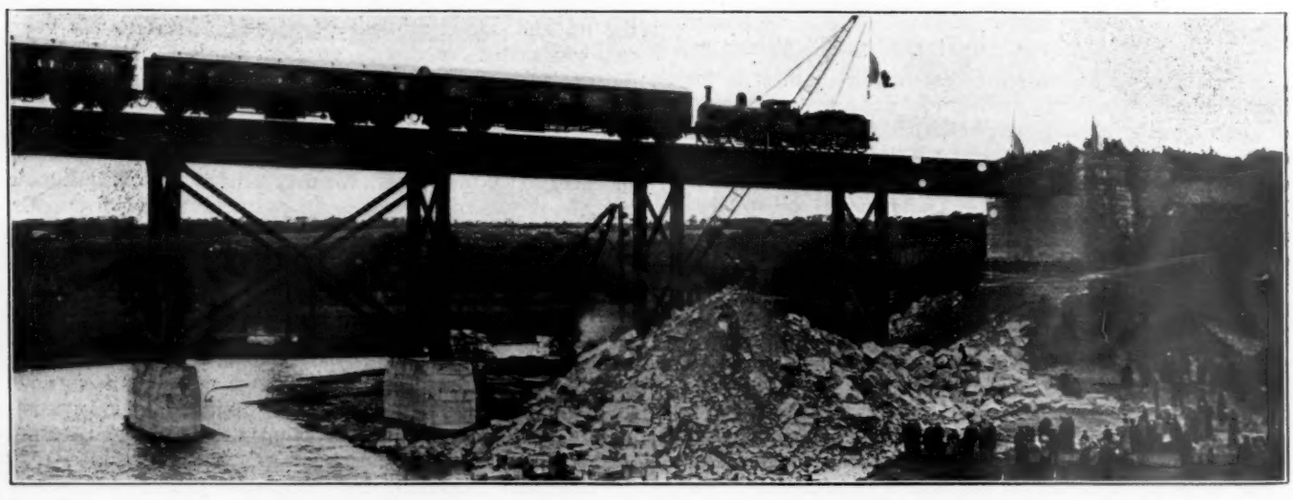
We observe with regret the continued agitation for a service bonus to veterans of the war in Europe. The bonus debate tends to distract attention and sympathy from the serious problem, constantly developing new perplexities of care and rehabilitation for soldiers wholly or partly disabled. The grants proposed would benefit no recipient, but injure many, and would divert into expenditures for consumption vast sums raised by taxation which otherwise would be invested in industry, agriculture and transportation, enlarging employment of men and production of necessaries. Time has brought a large part of the veterans back to the sentiment which pervaded the American Legion at its first convention, that our boys fought not for money but as a service to the nation. This was the view emphasized by the late President Harding in his veto message. We recommend that view to the veterans and to all who seek their welfare.

VII

The last Congress deadlocked between those favoring quality rather than quantity immigration and those urging more rigid exclusion to reduce the numerical total. We are glad to note some change in sentiment toward the quality standard. We renew our recommendation that the law provide admission of immigrants limited by quality of applicants instead of by their number.

Election of Officers

Alba B. Johnson of Philadelphia was re-elected president for the following year. The following vice-presidents were re-elected: Stephen C. Mason, Pittsburgh; Charles J. Symington, New York; J. G. Platt, Boston; William E. Sharp, Chicago, and S. L. Smith, Cleveland. Samuel M. Hastings of the Dayton Scale Company, Chicago, and B. L. Winchell, president of the Remington Typewriter Company, New York, were also elected vice-presidents. P. Harvey Middleton was re-elected treasurer.



P. & A.

President Cosgrave of South Ireland Officiating at Celebration of Completion of Viaduct Reconstruction at Mallow, Destroyed During Civil War

Recent Railway Progress in New England*

Reduction in Man-Hours Outstanding Feature of New Haven Operations—Surplus Hoped for in 1924

By C. L. Bardo
General Manager, New York, New Haven & Hartford

THE gross freight revenues for the various New England lines for the calender year 1922 were as follows:

Bangor & Aroostook	$6,252,791
Maine Central	14,165.202
Boston & Albany	17,877,383
Rutland	3,167,576
Central Vermont	5,662,593
Boston & Maine	48,264,236
C. N. E. Railway	6,226.291
New Haven	60,234,186
Total	$161,850,258

If to this there should be added the proportion which is paid to other carriers upon joint traffic, estimated on the basis of the relation of the New Haven's and connecting carrier's combined freight revenues, we have a total of all freight charges paid by New England producers and consumers of approximately $347,000,000 per year or 4.5 per cent of the combined value of the products of the industries and farms.

It is therefore shown that regardless of our seeming isolation from the source of raw materials and the markets the sum total burden of all rail freight transportation represents only 4.5 per cent of the combined value of the products of industry and farms. Can it be honestly claimed that this relatively small proportion is an undue tax for the service of this indispensable agency?

Contrast this tax upon industry and the farms for the service of an indispensable agency with the taxes—local, state, and national—which the railroads are called upon to pay, a substantial proportion of which is assessed and used for the promotion of not only a competitive agency but one which unless controlled will cut deep into the sources of railroad income.

The gross earnings for the year 1922 on the New Haven were $123,246,641. The total tax accruals were $4,586,324. The amount paid for taxes alone, therefore, represented 3.7 per cent of our gross earnings.

The Drain of Taxes

I mention this comparison solely for the purpose of bringing clearly to your minds one of the serious drains on railroad income. In 1918 the total taxes paid by the New Haven, state and federal, amounted to $3,216,376, so that for the year 1922 taxes had increased $1,369,949, or 42 per cent. For the five years. 1918 to 1922, inclusive, the New Haven alone paid, in state and federal taxes, $20,516,806. In 1921, the Class I railroads and large switching and terminal companies paid a total tax of $275,728,134, of which amount the states and municipalities received $237,951,361. For 1922 this item is estimated at approximately $304,000.000. The amount of taxes paid per mile of road is shown in the following table:

	State and local governments
1916	$628
1917	710
1918	759
1919	847
1920	1,036
1921	1,058

It has been estimated that for the year 1922 about $742,000,000 was spent for highway construction and maintenance. A substantial proportion of the $304,000,000 paid in taxes by the railroads has no doubt been diverted to the payment of these expenses. The railroads, therefore, have been and are being heavily taxed to pay for the construction and maintenance of highways over which ran in 1921 more than nine and three-quarter millions of motor vehicles. Of this number, 1,346,000 were motor trucks, competing on short distance hauls with the railroads which were taxed to build and maintain the hard surface roads which these motor vehicles require.

The railroad managements are materially circumscribed in the operations of their properties by reason of the fact that all of their income, and substantially 60 per cent of their expenses are controlled and fixed by governmental agencies. I make no criticism of this policy, since I am firmly of the belief that it is to the best interests of society as a whole to have these factors regulated in this way. It is my further belief that as time goes on the public will see these relationships in the proper light, and will approve of such readjustments in both factors as may be necessary to meet the economic needs of their transportation agencies.

The accompanying chart will bring clearly to your minds the fundamental causes of our present plight.

In the year ending June 30, 1915, the financial result of the New Haven, after the payment of all fixed charges, was a net of $2,307,971. For the year ending December 31, 1916, the net was $5,554,977, and for the year ending December 31, 1917, it was $2,404,095. In other words, in spite of greatly increasing wage rates, increasing prices of material, the congestion brought on by the mal-adjustment of traffic due to the increase of the business of the war industries and in spite of the light business in the 1915 year, there was a surplus after fixed charges. Although this surplus was not great, it was sufficient to cover the fixed requirements and to leave an additional surplus for improvements. During those years the operating expenses required from 67 cents to 72 cents of each dollar of operating revenue.

A Period of Engineering

The problem from 1916 for the next four or five years, whether government control had been instituted or not, was primarily an engineering problem. During this period the New Haven spent about $60,000,000 in additional equipment, additional yard and sidetrack facilities, signal and engine house facilities, including modern shop equipment. As a result, the physical capacity of the railroad was increased to the point that it could handle traffic at least 50 per cent greater than that which was offered during the congested period in 1915 and 1916 and handle it efficiently. The program during that period was that of spending a dollar to save a dollar, and the money to be spent had to be obtained from surplus earnings over fixed charges and by loans from the government and others.

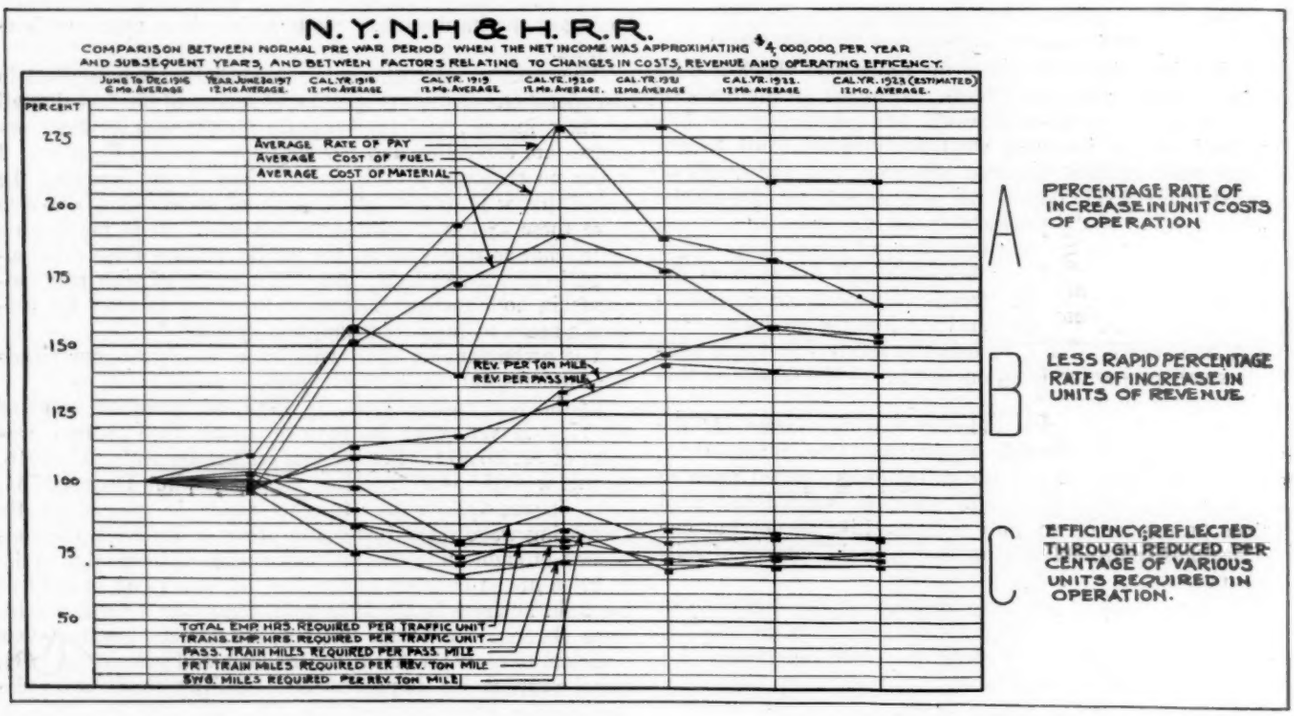
What might be termed an engineering period ended in 1920 and 1921 when the great bulk of the improvement program had been completed. The improvements required from now on will be only those necessary to keep ahead of the increasing volume of business by the replacement of facilities and equipment which become old, with modern types. In

*Address at the eighth annual meeting, Associated Industries of Massachusetts, Transportation Section Conference, Copley-Plaza Hotel, Boston, October 24, 1923.

other words, the improvement program differs little from that of any railroad in good physical condition.

Period of Organization and Administration

With the end of what I have termed the engineering period began what may be termed the period of organization and administration. This required first the complete adaptation of our service to make the best use of the additional facilities. Coincident with this was the necessity of again gathering the reins of administration completely in the hands of the management following the loosening of their grasp during the period of federal control. We frequently lose sight of the fact that although the local administration was made up of the same officers as those in periods prior to and subsequent to federal control, those officers had little or no voice in the handling of many problems of fundamental importance. Chief of these was in the respective rates of income and outgo. Oft repeated facts frequently become so familiar that their significance is ignored. The average revenue per unit of traffic from 1915 to 1922 increased in the vicinity of 60 per cent in the case of freight service, and about 46 per cent in the case of passenger service. The actual scale of rates increased more than this, but changes in character of traffic deprived us of the benefits of these changes in rates. On the other hand, the unit prices of labor from 1915 to 1922 increased slightly more than 100 per cent; the price of coal per ton increased more than 100 per cent. While the increases in the price of materials, comparing those today with 1915, have not been as great as changes in prices of labor and fuel; this increase is also in excess of the increased rates per unit of traffic which we are receiving. The effect of this fundamental problem is shown by the fact that had the operating ratio in 1922 been 67 per cent as it was in 1915 and 1916, our net income instead of being a deficit of $4,800,000 would have been a surplus of about $12,500,000.


N. Y. N. H & H. R. R.
COMPARISON BETWEEN NORMAL PRE WAR PERIOD WHEN THE NET INCOME WAS APPROXIMATING $4,000,000 PER YEAR AND SUBSEQUENT YEARS, AND BETWEEN FACTORS RELATING TO CHANGES IN COSTS, REVENUE AND OPERATING EFFICENCY.
JUNE TO DEC 1916 6 MO. AVERAGE
YEAR JUNE 30 1917 12 MO AVERAGE.
CAL YR. 1918 12 MO AVERAGE
CAL YR. 1919 12 MO. AVERAGE
CAL YR. 1920 12 MO. AVERAGE.
CAL YR. 1921 12 MO AVERAGE
CAL YR. 1922 12 MO. AVERAGE.
CAL YR. 1923 (ESTIMATED) 12 MO. AVERAGE.
PERCENT
225
200
175
150
125
100
75
50
AVERAGE RATE OF PAY
AVERAGE COST OF FUEL
AVERAGE COST OF MATERIAL
REV. PER TON MILE
REV. PER PASS MILE
TOTAL EMP HRS. REQUIRED PER TRAFFIC UNIT
TRANS. EMP HRS. REQUIRED PER TRAFFIC UNIT
PASS. TRAIN MILES REQUIRED PER PASS. MILE
FRT TRAIN MILES REQUIRED PER REV. TON MILE
SWG. MILES REQUIRED PER REV. TON MILE
A
PERCENTAGE RATE OF INCREASE IN UNIT COSTS OF OPERATION
B
LESS RAPID PERCENTAGE RATE OF INCREASE IN UNITS OF REVENUE
C
EFFICIENCY REFLECTED THROUGH REDUCED PERCENTAGE OF VARIOUS UNITS REQUIRED IN OPERATION.

The Reduction in Man-Hours

We are concerned, however, with the future rather than the past—with a prophecy rather than an explanation. We are today, as I have previously stated, in the period of organization and administration. This work has started immediately after federal control and was accompanied by great economies in our operating expenses. These were due first to the benefits derived from the program of improvement which had been carried on during the five years 1916 to 1920. The improvements, together with the gradual increase in the efficiency of operation have resulted in a saving of $15,000,000 in labor. This is not an estimate, but a definite and tangible saving which can be shown by the fact our man-hours which were 107,000,000 in 1916 and 120,000,000 in 1917, were only 89,000,000 in 1922. On the other hand, our freight business as expressed in revenue ton-miles was higher in 1922 than in 1916 and only slightly under 1917 and our passenger business in 1922 was substantially higher than in 1916 or 1917. Other economies due to the same results have been effected in fuel and in per diem, the saving in these two amounting to about $4,500,000.

From the point of view of operating economies, therefore, we find a definite and tangible justification of the improvement program. A further justification is found in increased capacity. Although there were periods of serious congestion in 1920 and 1922-23, these were all due to strikes. They had nothing to do with the facilities which had been provided. The best proof of this is in the fact that since April we have handled the largest sustained volume of freight business in the history of the company, and that this has been accomplished with a constantly increasing efficiency of operation. The volume of business in August was slightly higher than that in April, and was accomplished with 15,000 less cars on our line. To do this it has been necessary to make new records in car movement. The performance for the month of August in this respect is the best during the period of 10 years covered by our records. This record has been brought about largely through the program of improvements together with the all-around increase in the efficiency of our operating forces.

As another indication of the increased efficiency, the man-hours necessary for the transportation service have averaged about 3,700,000 during these last four or five months of heavy traffic as compared with an average of about 4,800,000 in a corresponding period in 1918 and about 4,000,000 in 1919, when the other peaks of business were handled. The

ratio of our transportation expenses to our operating revenues for the last four months has been lower than any period of equal length since 1916. These facts have an important bearing upon two factors, both of which are of vital importance to New England industries. These are the financial situation and service.

Restoration of Service

The principle of service and accommodation is one of the fundamentals of our public policy. Following the end of federal control, efforts were instituted to restore the arranged freight service which had been in effect for many years prior to the period of pre-war congestion in 1916. Once a service has been disorganized, it is extremely difficult to restore it to an efficiency equal to that formerly attained. This is truer on the New Haven and on the Boston & Maine than any roads of like size in the country. This is brought about by the necessity for matching up the movement of through and local trains on branch lines with the movement of our through service to our western connections. Only a detailed analysis of our freight service would indicate the difficulties faced, which by reason of your intimate knowledge of the transportation situation in New England, it is unnecessary for me to repeat here.

In brief, it means over-night service; service which will enable the shipper to load his freight up to the last possible moment in order to meet connections; a service requiring the most intensive study and supervision.

Recently Improved Performance

Throughout the year 1921 and the earlier part of 1922, we were gradually improving our service so that just prior to the strike we felt that it was the most satisfactory for many years. The strike completely disrupted these arrangements. The condition of motive power; the congestion; disarrangement of traffic routing on account of the embargo—all helped to break down the work of the previous two years. With the gradual elimination of congestion this spring, we have been able to restore this service more rapidly than at any previous time. This is clearly shown in our statistics of car movement. Our miles per serviceable freight car per day increased from April to August as follows:

April	13.7
May	16.7
June	18.2
July	20.2
August	21.5

From the point of view of the statistics, the August performance was the best of any of which we have a record—better even than the pre-war period in 1913, 1914 and 1915. To accomplish this result, we have had, in some cases, to operate lighter trains, and we are spending additional money in our yards.

It is significant that this improved car movement, which saved considerable per diem, cost money in the way of yard and train expense, a definite comparison of a recent period showing that with improved car movement we had saved approximately $22,000 per week in per diem, at an increased expense of $23,000 per week in yard expenses alone. It has been another case where we must spend money in order to save it, and we are hopeful that we will get our money back through the increased traffic which this service attracts. We have concrete evidence of such traffic already where the number of cars on these trains have very materially increased out of certain points. We provided the best service we could, consistent with the rigid economy necessary to avoid a deficit.

We believe that the arrangements now provide adequate and satisfactory service for all. Our efforts are now chiefly devoted to seeing that these arrangements are carried out according to schedule—that connections are made both between our local trains and our through trains, and between our through trains and those of our connections.

The Hope for 1924

While the continued results of the strike and adverse winter conditions, with the accompanying congestion piled up a deficit in the first three or four months of 1923 too great to offset during the balance of the year, the deficit for 1923 will be substantially below that of 1922. With the continuance of a reasonable amount of business and with the present greater efficiency of operation, 1924 will show a surplus after fixed charges instead of a deficit. I am not going to prophesy as to what this surplus will be, not because we have not definite figures in our minds or a definite standard to attain, nor because we have any doubt that surplus will be secured, but rather because we are going to depend upon results rather than optimistic assurances. Our program for 1924 provides that for our operations we shall spend not to exceed 75 per cent of each dollar of revenue. This is materially below the results of this year, but not so very much below the results of the last three or four months where the best showing has been between 77 per cent and 78 per cent. If we can attain the 75 per cent ratio, the surplus after fixed charges will be in the vicinity of $6,000,000.

In connection with this subject, and in view of some of the plans which have been proposed, I cannot refrain from asking the question—"How can the people of New England expect the stockholders of any other railroad to do for them and for their railroads that which they refuse to do themselves?"

The railroads are entitled to a living wage. They are required to conduct their properties on an efficient and economical basis, and to provide adequate service to the public. I believe they have met all of these requirements within the past six months by any fair test that can be applied. Yet, with few exceptions in the country as a whole, and without exception in New England, the returns have not been adequate to meet the economic absolute needs of the carriers.

It can hardly be said that business has been strangulated by the existing level of rates, since the railroads have handled during this year, the largest volume of traffic in the history of the country. True, the farmers, particularly in the wheat belt, have not prospered, and there is therefore much discontent regarding the situation in that quarter, but the indisputable fact remains that the remedy for the farmers' ills does not lie with the railroads nor with the level of railroad rates. It is due entirely to an economic condition over which neither the railroads nor the government can have more than fleeting control. The job before us all is to buckle in, put our shoulders to the wheel, and boost.

P. & R. Philadelphia Division Baseball Team Which Won the Cup Offered by President Dice

George R. Huntington

GEORGE R. HUNTINGTON, president of the Minneapolis, St. Paul & Sault Ste. Marie, the Duluth, South Shore & Atlantic and the Mineral Range, with headquarters at Minneapolis, Minn., died in that city of heart disease on November 3. Mr. Huntington had been associated with the Soo Line since 1888. He was made its general manager in July, 1909; was federal manager during the period of federal control but had been its president only since May, 1922, when he succeeded Edmund Pennington, who became chairman of the board. Mr. Huntington was also elected president of the Duluth, South Shore & Atlantic and the Mineral Range in April, 1923.

It would probably be the nearest correct to say that inasmuch as Mr. Huntington was president of the Minneapolis, St. Paul & Sault Ste. Marie only a year and a half, whereas he was federal manager for over 14 years, the influence he exercised as an officer of the company was greater as its chief operating officer than as its executive. The year and a half during which he served as president was not a normal one. The Soo is owned by the Canadian Pacific through majority stock control. Its characteristics partake in most ways, however, of those of its competitors or neighbors in the northwestern region rather than of those of its parent Canadian company. It has suffered during the past few years in the same manner as the other northwestern roads. In no year since the beginning of federal control has it approached a standard return level of net earnings. Improvement began to be effective in 1922 when the road came through the year with a net operating income of $7,178,971, as compared with the standard return of $10,578,977. This year the road has improved on its 1922 earnings. Its net for the first eight months of 1923 totalled $4,651,553, whereas in the first eight months of 1922 the net operating income was $3,332,081. The Soo earns the larger part of its year's net in the latter months of the year. Like the other northwestern railroads, the Soo has been affected by unfavorable conditions, such as the rate level and expanded operating costs, and by the fact that in a large share of its territory the conditions have ruled which a few months ago gave farmers dollar wheat with resulting detriment to their buying power.

George R. Huntington

The Soo has a substantial ore tonnage, which tonnage in the past few years has been subjected to most extreme fluctuations. It handled a favorable volume of it in 1922 and it is now handling a similarly favorable volume in 1923 so that the results upon its income have been good. No one speaks of the Soo Line without referring to the enormous dairying industry which has been built up along its lines in Minnesota and Wisconsin, and the development of which has helped the railroad accordingly. These are some of the factors which one must take into consideration in analyzing the situation of the Soo as it exists following the year and a half of Mr. Huntington's presidency.

Mr. Huntington was born on September 10, 1868, at New Lisbon, Wis., and entered railway service in 1882 as an office boy on the Chicago, Milwaukee & St. Paul. He was later promoted to operator and agent and in 1884 was again promoted to train dispatcher. In 1888 Mr. Huntington entered the service of the Minneapolis, St. Paul & Sault Ste. Marie as a train dispatcher and was later promoted to chief train dispatcher. He was promoted to division superintendent in June, 1899, and in October, 1900, was given promoted to general superintendent. In July, 1909, Mr. Huntington was promoted to general manager, which position he held until the period of federal control, during which he served as federal manager for the Soo Line, the Duluth, South Shore & Atlantic, the Mineral Range, the Copper Range and the Lake Superior Terminal & Transfer. Upon the termination of federal control on March 1, 1920, Mr. Huntington was again appointed general manager and ten days later was elected vice-president and general manager of the Minneapolis, St. Paul & Sault Ste. Marie, including the Wisconsin Central, and the Duluth, South Shore & Atlantic. In May, 1922, he was elected president of the Minneapolis, St. Paul & Sault Ste. Marie and held this position until his death.

THE CAR RECORD office of the Pere Marquette Railway has discovered that because of inaccurate records its periodical statements of efficiency have shown the number of freight cars on Pere Marquette rails at 13½ per cent larger than actually is the case.

For some time it has been realized that there was something radically wrong with the records. A careful check revealed the fact that there was an excessive number of open records, especially in the busy terminals, such as Detroit, where cars were moved in switching service from the Pere Marquette to large industries and then passed out of the terminal by other routes, leaving the record incomplete. Several checks of cars had been taken without satisfactory results but on Wednesday, October 17, a check was taken by a very large force, instructed in advance so that the check was completed in one hour, covering not only cars standing at stations and in terminals, but road trains as well. The result of this check showed that the Pere Marquette had been carrying in its records, 3,645 cars more than it actually had on its rails. This reduction amounts to 13.5 per cent.

While the effect of this re-check will not result in any changes from a money standpoint, it will show an increase in the miles per day per car on the Pere Marquette of approximately three miles.

COUNTERFEIT PAY CHECKS, drawn on the Chicago & Alton, have been passed in St. Louis. The checks are very good imitations and are easily mistaken for genuine checks.

General News Department

Mechanical Convention at Atlantic City

The General Committee of Division V, Mechanical, of the American Railway Association, at its meeting in New York on Thursday, November 8, decided to hold a convention with exhibits at Atlantic City on June 11-18, 1924. The Executive Committee of the Railway Supply Manufacturers Association also voted on the same day in New York to hold an exhibit on the same dates, viz., June 11-18, 1924.

The Bureau of Railway Economics, Washington, D. C., has moved to the Transportation Building, 17th and H Streets, N. W.; Room 1002.

The University of Illinois is to have a professorship in the economics of transportation, United States Senator William B. McKinley having given to the university securities yielding an income of $7,000 a year for the endowment of such a chair.

Stationary engineers and firemen and shop laborers on the Northern Pacific have been granted wage increases of about one cent an hour. Clerks, freight handlers, express and station employees on the Staten Island rapid transit have received wage increases of from one to two and one-half cents an hour.

The Chicago, Peoria & St. Louis was not sold on November 8, an order having been issued by Justice Clyde E. Stone of the Illinois Supreme Court, on November 1, postponing the sale until the court passes on the case. The writ of supersedeas stays all proceeding in the Sangamon County Circuit Court in connection with a decree of foreclosure against the railroad. A writ of error was filed in the Supreme Court to have the decree of foreclosure reviewed.

T. H. Beacom, receiver, answering the protest of the city council of Denver, Colo., against an order by the Denver & Rio Grande Western, transferring the home stations of some of its train service employees from Denver to Pueblo, explained that the change would not involve an actual movement of more than a few men and would result in a betterment of Denver's railroad service. He urged complete cooperation between the city and the Denver & Rio Grande Western to avoid misunderstandings and to aid in developing better railroad service.

Correction

An average of 141 pounds of coal per thousand ton miles, including locomotive and tender, was the rate of consumption shown by the Southern Pacific, Pacific System, for the month of August; not 162 pounds, as given in the government report printed in the *Railway Age* of November 27, page 785.

Signal Section Nominees

By a circular dated November 1, it was announced that the nominee for chairman of the Signal Section of the American Railway Association, to be voted on between now and the annual meeting is W. M. Vandersluis (I. C.); first vice-chairman, W. M. Post (Penn.); second vice-chairman, A. H. McKeen (U. P.).

Getting Down to First Principles

In court at Clarkesville, Ga., on October 31, Judge Jones held a hearing on the application of the receiver of the Tallulah Falls Railway to reduce the wages and salaries of all employees. The railroad is only 57 miles long and runs one passenger train each way daily; but the hearing consumed the entire day. The judge announced that he would render his decision later. The income of the road is not sufficient to enable the receiver to pay war-time wages and he asks that the salaries be cut so as to be commensurate with the income.

B. & M. Contemplating Group Insurance

Group insurance for employees of the Boston & Maine is being planned for, with the expectation of giving the benefits of the scheme to about 6,500 employees. This action has been taken at the request of the Mechanical Employees' Association. It is proposed to provide policies of $1,000 life insurance each, with certain weekly payments for sick or accident disability. As in other movements of this kind, at least 75 per cent of the employees in each class must accept the scheme before it can be made effective. The railroad company will, it is understood, contribute to the insurance the minimum proportion required under the insurance company's terms.

D. & H. Agents Buy Company's Stock

Fifty-five agents of the Delaware & Hudson have recently bought shares of the stock of the company, and the officers of the D. & H. Freight and Ticket Agents' Association propose to carry on a campaign to enlarge this number as rapidly as possible. The movement to buy shares was started by this agents' association, and at its last annual meeting, held at Bluff Point, N. Y., following a conference with J. T. Loree, vice-president, a program was formulated. Ownership of stock by employees is not a new thing in the D. & H. and there is one employee, it is said, who votes on 50 shares or more. The president of the Freight and Ticket Agents' Association is Edward Martin, of Coopers-town, N. Y., and the secretary is W. E. Crockett, of Oneonta.

Compilation of Operating Averages

For the convenience of those who are interested in analyzing the results of the operation of individual railroads, the Bureau of Statistics of the Interstate Commerce Commission has issued a compilation of operating averages of Class I steam roads for 1922, 1921 and 1916, from their reports to the commission. Such items have been selected (43 in number, with sub-items), as will afford the basis for a brief exposition of general results. The bureau states, however, that additional data, with due consideration of the physical and operating conditions on each road, will be necessary in searching for the full explanation of particular variations from what appear to be normal results. An appendix shows the sources of basic data and the formulas used in obtaining them.

Labor Unions' Political Activities

The presidents of the sixteen railroad labor organizations are to meet in Washington on November 14 to consider a legislative policy to be pursued during the next session of Congress. The call for the conference was issued by Warren S. Stone, president of the Brotherhood of Locomotive Engineers.

Members of the four train and engine service brotherhoods of Nebraska will oppose the formation of a third political party, according to resolutions adopted at a meeting of representatives of the brotherhoods in Lincoln, last week. The decision of the brotherhood embodied in the resolution is that the "brotherhoods must co-operate with farmers and labor in the selection of candidates regardless of their political affiliations." The railroad labor organizations of Nebraska

favor legislation by Congress to put the Federal Reserve Banks into the hands of the Government, to repeal the Esch-Cummins law, to curtail the power of the supreme court over the constitutionality of legislation, to increase tax rates on large incomes and inheritances and to establish minimum standards of employment for women.

The Train-Service Men's Request for Higher Pay

Negotiations with the railroads by representatives of the "Big Four" brotherhoods with respect to their request for increases in wages, which would restore the rates in effect prior to the reductions of July 1, 1921, have resulted, as was anticipated, in general rejection or postponement of the brotherhoods' demands and counter proposals to consider the elimination of the payment of time and one-half for overtime and other burdensome working rules which were put into effect during the period of government operation. According to D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen, his organization has received several hundred answers from railroad officers to the request for increased wages and in almost every case they showed a decided uniformity in failing to approve of wage increases and in requesting elimination of several working rules. Negotiations are continuing on a number of other roads, but it is expected that the entire case will be presented to the Railroad Labor Board within a short time.

National Association of Railroad Commissioners

The 35th annual convention of the National Association of Railway and Utilities Commissioners has been called by Dwight N. Lewis of Iowa, the president, to be held in Miami, Fla., beginning December 4, and to last four days. Headquarters will be at the Hotel Urmey. The local arrangements are in the hands of R. Hudson Burr, Chairman of the Railroad Commission of Florida, Tallahassee. The sessions of the convention will be devoted mainly to the consideration of reports from twenty standing and special committees on Public Ownership and Operation, Safety of Operation and the questions of Service, Rates and Demurrage; also express companies in their relations to the railroads, grade crossings, Motor Vehicle Transportation, and the other usual subjects. The super power movement will be considered. Hon. Herbert Hoover, Secretary of Commerce, who has been one of the leaders in this movement, has been invited to address the convention. The Committee on State and Federal Legislation will make a report which will have a leading place on the program. Hon. J. J. Esch will address the convention on the subject. Addresses are expected also from Donald D. Conn of the Car Service Division, A. R. A.; Hon. Carl D. Jackson and Hon. M. H. Aylesworth of the National Electric Light Association; J. B. Clumpp, president of the American Gas Association, and James P. Barnes of the Louisville Railway Association. Motor vehicle transportation will be discussed by Hon. E. V. Kuykendall of the State of Washington; the valuation of the railroads by the Interstate Commerce Commission, which will be discussed by Hon. Charles F. Staples, Director of Valuation for that Commission and Hon. Fred P. Woodruff of the Iowa Commission. There will be a round table discussion upon the subject of elimination and protection of grade crossings of railroads. A report on this subject will be presented by Hon. W. T. Gunnison of New Hampshire.

Railway Revenues and Expenses for September

The net railway operating income of the Class I railroads for September was $92,238,400 or at the rate of 4.46 per cent for the year on their tentative valuation plus additions and betterments up to January 1, 1923, according to a compilation by the Bureau of Railway Economics of the returns to the Interstate Commerce Commission. For the nine months ended with September the net was $718,948,600, or at the annual rate of 5.27 per cent. This represented an increase of $189,478,920 as compared with the results for the corresponding period of last year, when the rate of return was 3.96 per cent. For September last year the percentage of return was 2.90, but as compared with August this year when the percentage was 4.94 the returns for September show a decrease. The western roads show an improvement as compared with earlier months, their rate of return being 4.86 per cent while the eastern roads did not do so well as before, showing a rate of only 3.93 per cent. For the southern roads the rate was 5.20. Twenty-two Class I roads operated at a loss in September.

For the month the operating revenues totaled $545,502,700, an increase of nearly 6 per cent as compared with last September, while operating expenses amounted to $415,983,500, an increase of about 2 per cent. For the nine months the rate of return was 5.84 for the eastern district, 6.21 for the southern district and 4.35 for the western district. The percentages of return on property investment account for the nine months' period in the various sub-districts were:

	Per cent
New England district	1.95
Great Lakes district	5.80
Ohio-Ind.-Alleg. district	5.35
Pocahontas district	6.02
Southern district	5.25
Northwestern district	3.05
Central Western district	4.40
Southwestern district	3.57

Dynamite in a Collision

At Carl Junction, Mo., on the St. Louis-San Francisco on October 29, three cars of dynamite, in a switching freight train, fouling the main track, were struck by a passenger train, and one of the three cars was crushed; but there was no explosion. A fire started in one of the cars and the three, with 30 tons of explosives, were burnt up. Of the 18 passengers in the three-car passenger train, ten sustained minor injuries.

The cars of explosives, with one or two other cars, were being backed out of the spur track at a manufactory, and should have been stopped just before reaching the main track where, regularly, a stop is made to remove a spark arrester which has to be used on the locomotive while it is on the private siding; but for some reason not explained, the engineman did not apply the brakes in season, and the car farthest from the engine and nearest the main track moved some distance beyond the frog, the grade being descending. A brakeman jumped off and opened an angle cock, stopping the cars, but too late. The passenger train approached at about 30 miles an hour. The conductor had tried to stop it by motioning with his hat but it was quite dark (6 p. m.) and his action had no effect. The freight conductor had wasted some time by first going to a telephone, to learn the whereabouts of the passenger train, though it was already due.

The passenger engine crushed the end of the first freight car and caused the car body to break in two in the middle, and the locomotive was derailed. The dynamite in the cars consisted of (a) 20,650 lb. of 40 per cent L. F. Special; (b) 18,500 lb. per cent L. F. Gelatine and (c) 21,500 lb. of 20 per cent and 30 per cent NG dynamite, a total of about 30 tons in the three cars.

The rupture of the boxes of explosives allowed some of the cartridges to fall out, and they came in contact with the firebox of the locomotive; they were immediately ignited and the flames quickly spread to the entire contents of the car. The other two cars could have been pulled away, but a drawbar had been broken by the impact of the collision, and so all three cars were burnt up. Had the dynamite detonated, either by the impact of the collision or from any other cause, it is safe to say that no person would have been left alive to tell the tale. For some reason, not explained, the whole mass burned up quietly, though not without striking terror into the hearts of all the people round about.

Apparently the reason why the conductor had no lantern with which to signal the passenger train is the rule that switching at this explosives factory is usually done in the day time, night work and the use of lanterns being forbidden.

The fire department from Joplin was soon on the scene, but the superintendent of the explosives factory ordered the firemen to keep hands off and to use no extinguishing compounds. He also policed the premises and kept all persons back a half mile or more.

The Baltimore & Ohio Magazine

Can any reader guess the name of the very latest association of railroad men—and women? One hundred employees of the Baltimore & Ohio met in Baltimore, Md., on Friday and Saturday, October 26 and 27, and formed the Baltimore & Ohio Magazine Correspondents' Association, and the correspondents in each of the five operating districts propose henceforth to hold quarterly conferences.

The foregoing statement ought perhaps to be the last, not the first, paragraph of this article: for it represents the final action of a two-days' conference which was a notable event of itself, regardless of any permanent organization.

Robert M. Van Sant, editor of the magazine, invited the whole of his correspondents to attend a conference, in Baltimore; and interesting and profitable meetings were held on both of the two days. Of the 100 correspondents present 20 were women. The B. & O. Magazine, like most of the publications of this class, makes the department of news notes from each division of the road a prominent feature of every issue, and these correspondents in each case are appointed by their superior officers, with a view to their fitness—not selected at random or on the principle of taking the first individual who offers. Besides the usual news notes, consisting largely of items of personal interest, the correspondents each month have from the editor a letter, giving information as to the subject which is to be made the main feature of the coming issue, and thus this feature is made the subject of special stress not only at headquarters but on every division of the road.

The Editors and Correspondents of the Baltimore & Ohio Magazine

At the first session of the conference, President Daniel Willard addressed the correspondents for about an hour, outlining several phases of the railroad company's policy; and at the close he was introduced to each individual. These correspondents are from almost every department of the road—chief clerks, stenographers, machinists, enginemen, brakemen and so on. One of the most enthusiastic individuals at this conference was George W. Haulenbeek, a clerk in the law department, 80 years old, who has been in the service of the road for more than 40 years. Some of the other correspondents — the stenographers, for instance — were notable for their youth, not for their age.

On the evening of the first day, the correspondents were the guests of the company at a dinner, which included a concert by the Baltimore & Ohio Glee Club, a motion picture show and other entertainments. Speakers at the dinner were E. W. Scheer, W. W. Wood and Dr. G. B. Shattuck. The Saturday morning conference was followed by a brief address from Vice-President C. W. Galloway. On Friday afternoon, the correspondents were guests of the city of Baltimore on a boat trip around the harbor, and on Saturday afternoon guests of the railroad company at the Navy-Princeton football game.

The permanent organization mentioned above chose H. Irving Martin of the Relief department as president, with five vice-presidents representing the five operating districts.

Reporters for the 1925 Meeting of the International Railway Congress

The following will present reports from their respective countries at the next meeting of the International Railway Congress, to be held at London in 1925:

TRACK MAINTENANCE AND THE GRADE CROSSING PROBLEM

British Empire—W. H. Coomber, divisional engineer, London, Midland & Scottish.
America—G. J. Ray, chief engineer, Delaware, Lackawanna & Western.
France—Mr. Ruffieux, chief engineer, Paris, Lyons and Mediterranean.
Italy, Spain and Portugal—Mr. Mendizabal, cheif engineer of the Madrid, Zaragossa & Alicante.
Other countries—H. Deyl, adviser to the Ministry of Railways of Czecho-Slovakia, and Maas Geesteranus, chief engineer of the Netherlands Railways.

RAIL FAILURES AND RAIL JOINTS

British Empire—C. J. Brown, chief engineer, London & North Eastern.
America—W. C. Cushing, engineer of standards, Pennsylvania Railroad.
France—Mr. Merklin, chief engineer, Alsace-Lorraine Railways, and Mr. Cambournac, chief engineer, Northern Railway (France).
Other countries—Mr. Willem, chief engineer and director of administration of the Belgian State Railways.

YARDS, LAYOUT AND ORGANIZATION

British Empire—R. H. Nichols, superintendent of the line, Great Western.
America—S. T. Wagner, chief engineer, Philadelphia & Reading.
France and Belgium—Albert Moutier, assistant chief of operation, Northern Railway, and Mr. Pellarin, Eastern Railway.
Other countries—W. Simon-Thomas, chief of operation of the Netherlands Railways.

REDUCTION OF THE COST OF TRACTION

America—G. H. Emerson, chief of motive power, Baltimore & Ohio.
British Empire—C. B. Collett, chief mechanical engineer, Great Western, and Sir Henry Fowler, deputy chief mechanical engineer, London, Midland & Scottish.
Other countries—Mr. Chenu, inspector of direction and chief engineer, Belgian State Railways, and Mr. Tete, principal engineer of the second materials division, Paris, Lyons & Mediterranean.

ELECTRIC LOCOMOTIVE

America—J. T. Wallis, chief of motive power, Pennsylvania.
Other countries—M. Weiss, chief engineer of motive power, Swiss Federal Railways.

ENGINE HOUSES

America—R. W. Bell, general superintendent of motive power, Illinois Central.
British Empire—R. E. L. Maunsell, chief mechanical engineer, Southern Railway (England).
Other countries—J. Jacometti, chief engineer of motive power, Italian State Railways.

DISPATCHING

America—H. E. Hutchens, general inspector of passenger transportation, Southern Railway.
British Empire—J. H. Follows, chief general superintendent, London, Midland & Scottish.
Other countries—E. Epinay, assistant chief operating engineer, Paris-Orleans.

SUBURBAN SERVICES

America and British Empire—H. E. Blain, assistant managing director, and A. R. Cooper, chief engineer, Metropolitan District and London Underground Railways.
Other countries—Mr. Direz, assistant chief of operation, French State Railway.

SIGNALING

America—W. H. Elliott, signal engineer, New York Central.
British Empire—W. J. Thorrowgood, signal and telegraph superintendent, Southern Railway (England).
Italy, Belgium and Holland—C. de Benedetti, chief engineer of special service, Italian State Railways.
Scandinavia—T. Hard, principal engineer of the Swedish Railways.
Other countries—Mr. Pinus, assistant chief of operation, and Mr. Laigle, chief engineer of way, Southern Railway (France).

THE EIGHT-HOUR DAY

America and British Empire—W. Clower, assistant to general manager, London, Midland & Scottish
Switzerland, Italy, Spain and Portugal—L. Velani, chief of personnel, Italian State Railways.
Other countries—Mr. de Ruffi de Pontevès, chief engineer of mines and director of agents for the French Ministry of Public Works.

STATISTICS

America—J. T. Loree, vice-president, Delaware & Hudson.
Other countries—A. E. Kirkus, director of statistics, British Ministry of Transport.

JOINT FACILITIES

America and British Empire—R. Cope, chief accountant, Great Western (England).
France—Mr. Collot, assistant chief engineer of operation of the Eastern Railway (France), and Mr. Bruneau, chief engineer of operation, Southern Railway (France).
China and Japan—Mr. Nakagawa, commercial director, Japanese State Railways.
Other countries—U. Lamalle, director of administration, Belgian State Railways.

No Americans are assigned to report on the subject of light railways.

Traffic News

Through traffic on the line of the Kansas City, Mexico & Orient in Oklahoma has been restored following a period of almost complete suspension, due to extensive floods, since September 19. Damage to bridges on the line was estimated at $100,000 by officers of the road.

The Southwestern Freight Claim Conference at its meeting on October 26 and 27 at Waco, Tex., elected Harry Bierman (M.-K.-T.), Dallas, Tex., chairman, H. E. Ferree (Rock Island & Gulf), Fort Worth, Tex., vice-chairman, and H. L. Gohmert (S. A., U. & G.), San Antonio, Tex., secretary. Fort Worth was selected as the meeting place of the next conference which will be in January.

The Gulf Coast Lines have put into operation a train known as the Orleanean which leaves New Orleans, La., daily at 11:20 a. m., Houston 10:35 p. m., Brownsville at 11:55 a. m., and arrives at Mexico City at 6:00 a. m. the third morning (three nights on the road). The train has sleeping cars from Chicago (over the Illinois Central) to Brownsville, Tex.; from New Orleans to the City of Mexico and from Houston to other Mexican cities.

Freight Claim Agents Confer

The freight claim division of the American Railway Association will hold three territorial freight claim conferences during November. The Eastern Claim Conference was held at New York November 7 and 8. R. L. Calkins (N. Y. C.) is chairman, T. C. Smith (C. N. J.) is vice-chairman, and F. L. Ayres, is secretary. The Northwestern Claim Conference will be held at St. Paul, Minn., November 13. H. R. Crochau (C., St. P., M. & O.) is chairman, and E. C. Lewis (G. N.), secretary. The Chicago Claim Conference will be held in Chicago November 15 and 16. R. W. Cooke (Pennsylvania) is chairman, P. C. Archer (C. & A.), vice-chairman, and G. W. Loderhose (C., M. & St. Paul), is secretary.

Injunction Against S. C. Railroad Commission

The United States District Court at Charleston, S. C., on October 31 decided in favor of the Atlantic Coast Line and other railroads, in their suit to enjoin the Railroad Commission of South Carolina from enforcing its order calling for a reduction in passenger fares in that state to three cents a mile. The commission's order was declared null and void; but the two parties were ordered each to bear their respective costs in the case. The injunction covers two orders, No, 266, dated June 21, making the regular fare three cents a mile and No. 265, dated June 15, forbidding the collection of a surcharge in sleeping cars.

Suits for Overcharge Two Years Old

Eight railroads are named as defendants in suits aggregating $750,000 which were filed in the federal district court at Minneapolis, Minn., on October 30 by James DeBeau, manager of the Minnesota Claim Bureau, which represents 150 northwestern grain shippers. The actions involve interstate shipments of grain, and date back to 1921 when the Interstate Commerce Commission held that freight rates on grain were excessive and ordered a reduction of 17½ per cent. It is charged that the railroads delayed instituting the reductions for more than two months or until after the movement of the 1921 grain crops.

The amounts asked in the suit are based on the difference in bills paid by the shippers under the old rates and what the amount would have been had the reductions been made when ordered by the commission. The railroads named as defendants are the Chicago & North Western, the Minneapolis, St. Paul & Sault Ste. Marie, the Chicago Great Western, the Chicago, Burlington & Quincy, the Great Northern, the Northern Pacific, the Chicago, St. Paul, Minneapolis & Omaha and the Chicago, Rock Island & Pacific.

Commission and Court News

Interstate Commerce Commission

The Commission has announced that oral arguments will be held on December 17, 18 and 19, before the full commission at Washington in the case involving the distribution of the assigned and private cars for railroad and industrial fuel supply purposes.

State Commissions

The California Railroad Commission reports that there are now 713 motor carriers operating in California. During the calendar year 1922 the auto carriers of the state transported 21,221,928 passengers, and used in passenger service 1,600 cars. For freight carrying purposes nearly 1,500 motor trucks and trailers were used.

Personnel of Commissions

A. G. Mott, assistant engineer of the transportation division of the California Railroad Commission has been appointed transportation engineer, in charge of the division, to succeed H. G. Weeks, who has resigned to become assistant to the general manager of the Los Angeles Railway Corporation.

Court News

Violation of Federal Safety Appliance Act Not Cause of Injury

The Circuit Court of Appeals, Eighth Circuit, holds that if a fireman, having finished his duty of coupling cars, takes a dangerous position in signaling the engineer to move, and is injured, the proximate cause of his injury is not any violation of the Safety Appliance Act, but his own carelessness.—Davis v. Hand, 290 Fed. 73.

Supreme Court of the United States

Stipulation Limiting Liability for Interstate Shipment Cannot Be Invalidated by State Law or Practice

In an action in a court of Louisiana for the actual value of a trunk of less than 100 lb. weight, delivered for carriage from Madisonville, Tex., to Thibodeaux, La., but not delivered by the carrier, the carrier relied on the limitation of its liability to $50 in the receipt for the shipment. The court, following article 2754 of the Louisiana Revised Civil Code, held that the burden was on the carrier to prove that the loss had been occasioned by "accidental and uncontrollable events," and gave judgment for the actual value, $863 and interest. The Court of Appeal took the same view, and said that failure to make that proof was equivalent to an admission of converting the property to its own use; and this was upheld by the state Supreme Court.

The Supreme Court of the United States reverses these judgments, holding that "the limitation of liability was valid, whatever may be the law of the state in cases within its control. The effect of the stipulation could not have been escaped by suing in trover and laying the failure to deliver as a conversion, if that had been done. No more can it be escaped by a state law or decision that a failure to deliver shall establish a conversion unless explained. The law of the United States cannot be evaded by the forms of local practice. Under the law of the United States governing interstate commerce the stipulation constituted a defense to liability beyond $50, unless the plaintiff should prove some facts that took the case out of the protection of the contract. It had that scope in whatever court it came up. The local rule applied as to the burden of proof narrowed the protection that the defendant had secured, and therefore contravened the law." American Railway Express Co. v. Levee. Decided October 22, 1923. Opinion by Justice Holmes.

Foreign Railway News

New Railway for Japan

TOKIO.

The Tobu Railway, one of the largest private railways in Japan, which has obtained a charter to lay a new line to connect Tokio with Nikko, has started its preliminary surveying. The traffic manager of the company says that the line is to be roughly 66 miles in length. It will start at Asakusa, which now serves as terminus of the Tobu line, and will terminate near Chuzenji Lake, Nikko. The line will be electrified. It will parallel the State Railways in several districts.

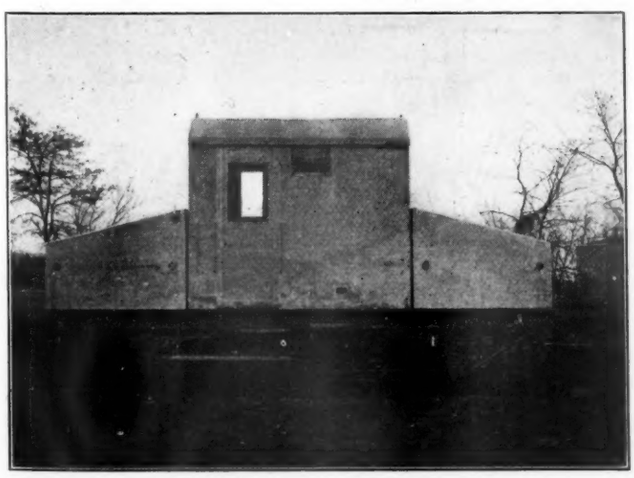
271 Swedish Locomotives Received in Russia

Of the 500 railroad locomotives of the 0-10-0 type ordered by Russia from the Swedish firm Nydquist & Holm in 1921, 271 have been passed by the Russian inspecting commission up to September 1, and 55 more were expected to arrive before the close of the present navigation season, according to an abstract from Economic Life (Moscow) appearing in Commerce Reports.

The new locomotives have already been placed in operation on the Northern, the Murmansk, the Moscow-Kazan, the Kiev-Voronezh, the Southern, the Syzran-Viazma, and the Transcaucasian Railways.

Motor Trains Increasing in France

The use of internal-combustion motors for trains appears to be developing rapidly in France. The State Railway, it is announced, has recently placed an order for 10 units on the model of the one tried out successfully between Mortagne and St. Gauberge, the motor being applied to an ordinary passenger coach. The Renault firm is also actively engaged in perfecting a new type of motor train called the Scemia-Renault, which was run on trial recently over the lines of a local Rheims company. This car carries 40 passengers and is equipped with double-end controls, whereby the necessity of a turntable is avoided. On the 350-mile stretch between Rheims and Asfled, with 2.5 to 2.8 per cent grades, the average gasoline consumption was 108 gallons per 1,000 miles and the average speed 25 miles per hour. With a trailer, the consumption would be 138 gallons. It is stated that orders for six cars have been received and that the Societe des Transports en Commun de la Région Parisienne, which controls all the surface traffic in and around Paris, intends to place one of them in regular service on the Versailles-Les Mureaux line.



A Reinforced Concrete "Fourgon" (i.e. Caboose) on the Northern Railway (France)

Equipment and Supplies

Locomotives

THE LONG BELL LUMBER COMPANY has ordered 3, 70-ton geared locomotives from the Willamette Iron & Steel Works, Portland, Ore.

THE TEMISKAMING & NORTHERN ONTARIO, reported in the *Railway Age* of September 29 as inquiring for 4 Mikado type locomotives, has ordered 3 of these locomotives from the Canadian Locomotive Company, Ltd.

Freight Cars

THE WABASH is inquiring for 1,750 automobile cars.

THE CHICAGO & ALTON is inquiring for 250 box cars of 40 tons' capacity.

THE PATAGONIA RAILWAY is inquiring through the car builders for prices on 15 double sheathed box cars and 40 flat cars.

THE FRUIT GROWERS' EXPRESS is inquiring for 600 steel underframes for refrigerator cars to be built in its own shops at Indiana Harbor.

THE CHESAPEAKE & OHIO is reported to be inquiring for 2,000 gondola cars of 57½ tons' capacity. This item has not as yet been officially confirmed.

THE KING CHEMICAL COMPANY, New York, has ordered 2 tank cars from the General American Tank Car Corporation for shipping sulphur dioxide.

THE BALTIMORE & OHIO, reported in the *Railway Age* of October 13 as inquiring for 1,000 mill type gondola cars, has decided not to purchase this equipment.

THE ST. LOUIS-SAN FRANCISCO, reported in the *Railway Age* of October 6 as inquiring for 2,500 ventilated refrigerator cars, has decided not to buy this equipment.

THE LEHIGH & NEW ENGLAND, reported in the *Railway Age* of September 29 as inquiring for from 6 to 8 caboose cars, has ordered 7 caboose cars from the Magor Car Corporation.

THE SPOKANE, PORTLAND & SEATTLE, reported in the *Railway Age* of September 29 as inquiring for 50 cars, has ordered this equipment from the American Car & Foundry Company.

THE BALTIMORE & OHIO, reported in the *Railway Age* of October 6 as inquiring for 400 hopper car bodies and 100 box car bodies, has ordered 500 hopper cars from the Pressed Steel Car Company and 500 box cars from the American Car & Foundry Company, the railroad reserving the right to furnish some of the trucks.

Passenger Cars

THE NORTHWESTERN RAILWAY OF BRAZIL is inquiring through the car builders for about 6 passenger cars.

THE SEABOARD AIR LINE is inquiring for 3 combination baggage and mail cars and from 1 to 3 horse cars.

THE GULF COAST LINES, reported in the *Railway Age* of September 8 as inquiring for 4 coaches, 2 partition coaches, 2 baggage and 2 baggage and mail cars, has ordered this equipment from the American Car & Foundry Company.

THE LOUISVILLE, HENDERSON & ST. LOUIS, reported in the *Railway Age* of October 20 as inquiring for 3 baggage and mail cars, 2 coaches and 2 smoking cars, has ordered this equipment from the American Car & Foundry Company.

Iron and Steel

THE GREAT NORTHERN is in the market for 1300 tons of bridge steel.

THE BALTIMORE & OHIO has ordered 3,000 tons of structural steel from the American Bridge Company.

THE UNION PACIFIC is inquiring for 105 tons of structural steel for an overhead highway crossing to be constructed at Riverdale, Utah.

THE ST. PAUL BRIDGE & TERMINAL RAILROAD CO., has ordered 378 tons of structural steel consisting of eight 80-ft. spans from the Wisconsin Bridge Co.

THE LOUISVILLE & NASHVILLE has ordered 800 tons of structural steel from the Virginia Bridge & Iron Company, 300 tons from the American Bridge Company, and 150 tons from the Louisville Bridge & Iron Works.

Machinery and Tools

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for 10 machine tools.

THE ILLINOIS CENTRAL is inquiring for one motor-driven upright drill with a 36-in. table and a capacity for drilling 2½ in. holes with high speed drills.

THE CENTRAL OF GEORGIA is inquiring for prices on a number of machine tools including a 36-in. shaper; a flanging clamp; boring mill; and punching machine.

THE LONG BELL LUMBER COMPANY has ordered from the Willamette Iron & Steel Works, Portland, Ore., 10 electrically operated yarders and loaders equipped with General Electric appliances.

THE NORFOLK & WESTERN is inquiring for a 60-in. engine lathe; 5, 16-in. engine lathes; 2, 20-in. engine lathes; 1, 36-in. draw-cut shaper; a 26-in. upright drill; 3 radial drills, one of 4-ft. and two of 6-ft.; a nut facing machine; a No. 2 universal milling machine, and a universal cutter and tool grinder.

THE BALTIMORE & OHIO is inquiring for a number of machine tools including a 20-in., upright drill; a drill grinder; a 90-in. journal truing lathe; 2 driving box boring and facing machines; 2, 36-in. upright drills; 1, 7-ft. radial drill; 2, 16-in. engine lathes; also 3 shapers, including one of 24-in., one of 28-in., and the other one 30-in.

Signaling

THE BALTIMORE & OHIO has placed an order with the Union Switch & Signal Co., for five mechanical interlocking machines, four levers each.

THE PENNSYLVANIA has placed an order with the Union Switch & Signal Co., for a 10-lever Saxby & Farmer interlocking machine to be installed at Olean, N. Y.

THE NEW YORK, CHICAGO & ST. LOUIS placed an order with the Union Switch & Signal Co., for a 4-lever Saxby & Farmer interlocking machine for use at Bellevue, Ohio.

THE NORFOLK & WESTERN has ordered from the Union Switch & Signal Company materials for automatic a.c. block signals on the Shenandoah Division, 106 miles, single track, between Shenandoah, Va., and Hagerstown, Md.; 114 ground signals and 88 bracket signals, all of the a.c. position-light type; together with 700 a.c. relays, 475 transformers, etc.

THE CANADIAN NATIONAL has placed an order with the Union Switch & Signal Co., for materials to be used in the installation of a half interlocking plant at the crossing of its line with the Port Arthur Electric Railway at Fort Williams, Ont., where color light signals and a three-position Style DW "automatic flagman" will be used; and for the installation of automatic highway flagmen at Gore street, Frederica street and Edward street, Fort William.

Supply Trade News

The Orton & Steinbrenner Co., Chicago, has completed an addition to its works at Huntington, Ind., which will double the output of the company.

R. P. McCormick will have supervision of the sales activities of the Eastern district for the **Pauling & Harnischfeger Co.,** Milwaukee. He will be located at 30 Church street, New York.

D. P. Bennett, vice-president of the **Pittsburgh Steel Company,** Pittsburgh, Pa., has been elected president, and **E. H. Bindley,** a director, has been elected vice-president. **Henry J. Miller** was elected a director to succeed the late **Willis T. McCook.**

The J. G. Brill Company, Philadelphia, on November 1 purchased the railroad motor coach division of the Service Motors, Inc., Wabash, Ind., with exclusive rights for the production and sale of the type of gasoline-driven rail car heretofore known as the Service Model 55 Railroad Motor Coach. Cars of this type now in operation have completed one million and a half miles of service. While the Brill Company has heretofore furnished only the bodies for these cars, it will now furnish the complete units without change in design. This type car will now be known as the Brill Model 55 Gasoline Car and will be handled by the automotive car division of the J. G. Brill Company, Philadelphia, with **C. O. Guernsey,** designer of this unit and formerly vice-president of Service Motors, Inc., as chief engineer; **C. J. McPherson,** sales manager; **A. H. Hudson,** formerly of Service Motors, Inc., as Eastern representative, and **A. F. McCormick,** formerly of Service Motors, Inc., as Southwestern representative. All renewal part business for cars of this type now in service and guarantees given by Service Motors, Inc., have also been taken over by the Brill Company.

SHIPMENTS OF APPLES from points on the Cumberland division of the Baltimore & Ohio this season have reached a total of 2,500 carloads, the heaviest movement in the history of this traffic.

THE GRADE CROSSING.

From The N. Y. World.

Railway Construction

ARKANSAS & LOUISIANA MISSOURI.—This company plans the construction of a freight station at Monroe, La., to cost $25,000.

ATCHISON, TOPEKA & SANTA FE.—This company has completed surveys for the contemplated four-mile extension from Tonkawa, Okla., to the Three Sands oil fields. It is estimated that the project would cost $100,000.

ATCHISON, TOPEKA & SANTA FE.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the construction of an apprentice school building at San Bernardino, Cal., to cost $30,000.

BALTIMORE & OHIO.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the construction of water treating plants, of 100,000 gallons per hour capacity each at Old River Junction, Ohio, Troy, Lima, Deshler and Rossford.

CANADIAN PACIFIC.—This company has awarded a contract to Luney Bros., Victoria, B. C., for the construction of the steamship terminal building at Victoria, B. C., reported in the *Railway Age* of August 11. The estimated cost of the building is $200,000.

CANADIAN PACIFIC.—This company has awarded a contract to J. W. Mohler, Camrose, Alberta, for the extension of the Edmonton, Dunvegan & British Columbia from Grande Prairie, B. C., to a point 15 miles west, and of the Central Canada from Berwyn, B. C., to a point 13 miles west.

CHICAGO & ALTON.—This company will construct a two-story freight and passenger station at Hardin, Ill., the new terminus of the Eldred branch.

CHICAGO & NORTH WESTERN.—This company will construct a storehouse at Casper, Wyo., at a cost of approximately $14,000.

DENVER & RIO GRANDE WESTERN.—This company will construct a concrete viaduct over its tracks at Eighth street, Pueblo, Colo., at a cost of approximately $350,000. The new viaduct will be used for street traffic, eliminating the existing grade crossing.

DENVER & RIO GRANDE WESTERN.—This company will construct extensions to its yard at Burnham, a suburb of Denver, Colo., at a cost of $250,000.

ERIE.—This company has awarded a contract to Roberts & Schaefer Company, Chicago, for the construction of a 200-ton steel automatic electric coaling station at Brier Hill, Ohio.

PHILADELPHIA & READING.—This company has awarded a contract to O'Rourke Brothers, Philadelphia, for masonry work and substructure of a bridge carrying the tracks of its Norristown branch over Fountain street, North Manayunk, Pa. The contract for water-proofing has been awarded to Martin & Breen, Inc. Philadelphia.

PUEBLO CONSERVANCY DISTRICT.—This organization, through the Dayton Morgan Engineering Company, Dayton, Ohio, will call for bids in November or December for the construction of flood control work at Pueblo, Colo., involving the construction of a new river channel to carry 125,000 cu. ft. per second of water, 34 miles of railroad tracks and a barrier dam 35 ft. high and 3,060 ft. long. The project, which will cost approximately $4,000,000, includes the following kinds of work: Excavation of 1,000,000 cu. yds. of earth from dry cut to form the new channel; excavation of 54,000 cu. yds. of earth from the channel; construction of small levees consisting altogether of 140,000 cu. yds. of earth; 170 cu. yds. of grading of railway embankment; 281,000 cu. yds. of rolled fill embankment in the dam; levee and channel slope paving; headgate structure of 660 cu. yds. of reinforced concrete; retaining wall of 1,400 cu. yds. of concrete; five culverts averaging 125 ft. in length; three track concrete through girder bridge, 200 ft. long; five bridge substructures; a dam including a spillway of plain concrete; wing walls of plain concrete railroad conduit of reinforced concrete and ditch culvert of reinforced concrete; one 400-ft., double-track through railroad bridge; reconstructing several existing spans and supplying new viaduct steel spans; one 400-ft. double-track through pin connected railroad bridge; one 280-ft. through pin connected steel highway span; 35 miles of standard gage of railroad track; removal of 35 miles of present main line and yard tracks; one row, 13,600 ft. long of interlocking steel sheet piling and 5,000 ft. of vitrified tile sewer. In addition to the foregoing for which contracts will soon be let, certain work to be carried on later is as follows: construction of reinforced concrete underpass containing 2,000 cu. yds. of concrete; local freight house; ice house; small office buildings; wheel house; coal chute; ash pits and a 3-stall addition to the engine house.

ST. PAUL UNION DEPOT.—This company plans the construction of a roundhouse, adjoining the Union Depot yards, at St. Paul, Minn., to cost approximately $75,000.

SOUTHERN PACIFIC.—This company contemplates constructing new shop buildings and roundhouse facilities at Valentine, Tex.

TENNESSEE CENTRAL.—This company contemplates the construction of a four-story passenger station and office building at Nashville, Tenn., to cost approximately $150,000.

WABASH.—This company has prepared plans for an addition to its enginehouse and shops at Moberly, Mo., to cost $65,000.

Recent Construction on Canadian Pacific

The Canadian Pacific has recently completed several improvements in its facilities in the vicinity of Montreal, including the construction of a new subway at Westmount Station, the installation of an electrical interlocking plant to control the movements of trains passing to and from the Glen Yards and a new coaling plant at Outremont.

Nearly 200 miles of new 100-lb. rails have been laid this summer on the Sherbrooke subdivision between Megantic, P. Q., and South Stukely and between Vaudreuil and Ottawa, and over 200 miles of track have been rock-ballasted, most of the work being done between Montreal and Toronto. By the close of the season the Canadian Pacific will have rock ballast over 700 miles of track on its eastern lines.

Slightly over 100 track miles of steel between Megantic and South Stukely were replaced by one gang of men in 20 days. On one particular day they laid 10 miles of track—both rails—in 10 hours, and this with trains continually passing over their work. One mile of the track was changed in 28 minutes. The steel to Ottawa was laid in 27 days. In addition to the laying of new steel, the track has been completely equipped with tie plates.

Bridges have been given particular attention this year, and the renewal of bridges to handle the heaviest power between Calumet and Ottawa has enabled the company to cut 45 minutes off the time schedule between Place Viger Station, Montreal, and Ottawa. The renewal operations were commenced last summer, and completed early this fall.

The Canadian Pacific creosoting plant at Sudbury has been in operation all summer and delivered to the line over a million track and switch ties which were distributed to the various parts of the eastern lines. Nine hundred thousand ties are now stacked up ready to be seasoned and treated by this plant. The company has carried out an extensive painting program, especially in regard to out-lying station buildings and steel bridges, but this has been in line with the "Save the Surface" policy of the Canadian Pacific which has been in force since the company's inception.

At Montreal, Megantic and Jackfish, reinforced concrete coaling plants, with capacity of 300 tons each, have replaced the old wooden structures. Ten all-steel water tanks of from 40,000 to 100,000 gallon capacity, have been erected at various points.

One hundred and twenty-five track miles of the rails released from the main lines, have been brought into the shops where the rail ends have been sawn off and redrilled for branch line extensions in the west, and for the re-laying of branch lines where at present light rails are in service. This work has also been in progress to an even greater extent at the Canadian Pacific shops at Winnipeg.

Other track improvements include the installation of the drainage through cuttings on the main line for the improvement of track drainage and strengthening of the roadbed. Other large works undertaken by the company this year, and not yet completed, are the new passenger station at Fredericton, New Brunswick, and the construction of a modern freight shed with team delivery trucks at Pembroke, Ont.

Railway Financial News

BOSTON RAILROAD HOLDING COMPANY.—*Election of Officers.*—Arthur P. Russell, vice-president of the New York, New Haven & Hartford, has been elected president of the Boston Railroad Holding Company, and Charles F. Choate, Jr., and James L. Richards have been elected vice-presidents. This is the first election of officers since the holding company stock was returned from the hands of public trustees to the New Haven Railroad. The holding company owns the New Haven's interest in the Boston & Maine.

CAMPBELLS CREEK.—*Asks Authority to Sell Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell 2,795 shares of its capital stock at par, the proceeds of 2,080 shares to be applied to the payment of bonded indebtedness amounting to $208,000. The proceeds of 400 shares are to be applied as payment of the company's indebtedness to the Campbells Creek Coal Company. Authority is asked to sell from time to time hereafter 315 shares for corporate purposes.

CENTRAL OF GEORGIA.—*Asks Authority to Increase Common Stock.*—This company has asked permission of the Interstate Commerce Commission to increase its outstanding common stock from $5,000,000 to $20,000,000 in order to retire its preferred stock, outstanding in the amount of $15,000,000, by exchange share for share. All of both common and preferred stock outstanding, except directors' qualifying shares, is owned by the Illinois Central. The application represented that having only one class of stock will simplify accounting.

CENTRAL NEW ENGLAND.—*Dividends.*—The directors have declared dividends of 6 per cent on the preferred stock and 2 per cent on the common, both payable November 7. The dividends are the same as were paid in 1922, but no dividends were declared in 1920 and 1921. The stock is practically all owned by the New York, New Haven & Hartford.

GREENWICH & JOHNSONVILLE.—*Authorized to Issue Bonds.*—This company has been authorized to issue $500,000 of 6 per cent first mortgage gold bonds to be sold directly by the carrier at par and accrued interest to the Delaware & Hudson Company, and the proceeds used to retire a similar amount of 4 per cent first mortgage bonds maturing January 1, 1924.

GRAND TRUNK.—*Investors' Claims.*—See article on another page of this issue.

MISSOURI PACIFIC.—*Asks Authority for Equipment Trusts.*—This company has asked authority from the Interstate Commerce Commission to guarantee $3,900,000 of 5½ per cent equipment trust certificates to be sold to Kuhn, Loeb & Co., at 95⅜, the proceeds to be applied to the purchase of equipment estimated to cost $5,347,653, comprising 50 locomotives and tenders and 77 passenger cars.

OLD COLONY RAILROAD.—*Bonds Sold.*—R. L. Day & Co., Harris, Forbes & Co., Kidder, Peabody & Co., and Remick, Hodges & Co., have sold $3,500,000 first mortgage 20-year 5½ per cent gold bonds at 99 to yield about 5.58 per cent.

PERE MARQUETTE.—*New Directors.*—M. C. Brush, president of the American International Corporation, George C. Frazer and Thomas F. Woodlock have been elected directors to succeed Charles S. Sargent, Jr., Frederick Strauss and W. P. Philips, resigned in accordance with the terms of the Clayton Act.

Trend of Railway Stock and Bond Prices

	Nov. 7	Last Week	Last Year
Average price of 20 representative railway stocks	60.05	58.21	70.31
Average price of 20 representative railway bonds	82.38	81.84	86.65

Railway Officers

Executive

A. B. Campbell has been appointed treasurer, general freight and passenger agent, auditor and purchasing agent of the Potato Creek, with headquarters at Buffalo, N. Y., succeeding E. A. Mayer, resigned.

W. J. Buchanan has been elected president of the Louisiana & Arkansas with headquarters at Texarkana, Ark., succeeding William Buchanan whose death on October 26 was reported in the *Railway Age* of November 3.

Fred Zimmerman, vice-president of the Chicago, Indianapolis & Louisville with headquarters at Chicago, has been elected president of the Cincinnati, Indianapolis & Western, with headquarters at Indianapolis, Ind., succeeding **B. A. Worthington,** who has resigned.

Operating

G. P. Brock has been appointed assistant to the general manager of the Gulf, Mobile & Northern, with headquarters at Mobile, Ala.

J. A. Kauffman has been appointed assistant general manager of the Kentucky, Rockcastle & Cumberland with headquarters at Louisville, Ky.

K. H. Gillette has been appointed assistant superintendent of the Los Angeles division of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., and will have jurisdiction over the Los Angeles terminal.

L. F. Shea has been appointed superintendent of communication of the New York, New Haven & Hartford, with headquarters at New Haven, Conn., succeeding C. S. Dow, resigned. **G. A. Cox** has been appointed supervisor of communication, Lines West, with headquarters at New Haven.

J. W. Rea has been appointed inspector of transportation on the Missouri Pacific, with headquarters at St. Louis, Mo., reporting to the general manager, and **H. S. Grant** has been appointed inspector of transportation, with the same headquarters, reporting to the superintendent of transportation.

C. E. Lanham, superintendent of car service of the Gulf, Mobile & Northern, with headquarters at Mobile, Ala., has been promoted to superintendent of transportation, with the same headquarters. The new office will include the duties formerly discharged by Mr. Lanham as superintendent of car service.

George F. Dickson, superintendent of the Gulf & Ship Island with headquarters at Hattiesburg, Miss., has been promoted to general superintendent in charge of the transportation, roadway and mechanical departments with the same headquarters. The position of superintendent has been abolished.

V. S. Burnham, trainmaster of the San Joaquin division of the Southern Pacific, with headquarters at Bakersfield, Cal., has been transferred to the Tucson division, with headquarters at Yuma, Ariz., succeeding **R. G. Prosole,** who has been transferred to the San Joaquin division, with headquarters at Bakersfield, succeeding Mr. Burnham.

C. D. Glass, assistant superintendent of the Port Arthur division, Western region, of the Canadian National, with headquarters at Rainy River, Ont., has been transferred to the Minaki and Quibell subdivision of the Port Arthur division, with headquarters at Sioux Lookout, Ont., succeeding **S. McElroy,** who in turn succeeds Mr. Glass.

Norman B. Pitcairn, whose appointment as superintendent of the Norfolk Division of the Pennsylvania with headquarters at Cape Charles, Va., was reported in the *Railway Age* of

October 27, page 794, was born at Harrisburg, Pa., on November 8, 1881, and was graduated from Princeton University as a civil engineer in 1903. He entered railway service on June 29, 1901, as a rodman on the Pennsylvania and held that position until July 1, 1904, when he was appointed transitman. On June 1 of the next year he was appointed assistant supervisor and on February 1, 1910, was promoted to supervisor, which position he held until November 10, 1919, when he was appointed division engineer of the New York division, which position he held at the time of his recent promotion.

James B. Phelan, whose appointment as superintendent of the Schuylkill division of the Pennsylvania with headquarters at Reading, Pa., was reported in the *Railway Age* of October 27, page 794, was born at Moberly, Mo., on September 20, 1884, and was graduated from the University of Missouri as B. S. in C. E. in 1907. On September 12 of the same year he entered railway service on the Middle Division of the Pennsylvania. On November 1, 1909, he was appointed yard master on the same division and held that position until March 1, 1913, when he was appointed assistant station master. In November of the next year he was appointed freight train master which position he held until July 1, 1916, when he was appointed acting assistant passenger train master of the Middle Division and on February 1, 1918, was again appointed freight train master of the same division. On March 1, 1920, Mr. Phelan was appointed assistant superintendent of the Middle Division and on April 15, 1922, was transferred to the Philadelphia division in the same capacity, which position he held at the time of his recent promotion.

P. L. Grove, whose promotion to general superintendent of the Michigan division of the Pennsylvania, with headquarters at Grand Rapids, Mich., was reported in the *Railway Age* of October 27, was born on October 3, 1878, at Altoona, Pa. He entered railway service on May 1, 1894, as a messenger in the Altoona shops of the Pennsylvania and two years later was promoted to machinist apprentice. In 1899, he was promoted to machinist on special assignments, being promoted to inspector at the Columbia shops of the Philadelphia division in February, 1902. Mr. Grove was promoted to foreman of the State Line shops of the Bedford division in October, 1904, and in July, 1905, was again promoted to assistant master mechanic of the Altoona machine shop. He was promoted to assistant engineer of motive power of the Northern division, with headquarters at Buffalo, N. Y., in September, 1910. In September, 1917, he was promoted to superintendent of the Delaware division of the Philadelphia, Baltimore & Washington with headquarters at Wilmington, Delaware, and in February, 1920, was transferred to the New York division, with headquarters at Jersey City, N. J., which position he was holding at the time of his recent promotion.

P. L. Grove

H. H. Garrigues, whose promotion to general superintendent of the Illinois division, Northwestern region, of the Pennsylvania with headquarters at Chicago, was reported in the *Railway Age* of October 27, was born on September 4, 1881, at Harrisburg, Pa. After graduating from Haverford College, he entered railway service in February, 1901, as a rodman on the Pennsylvania. In March, 1903, he was transferred to the Philadelphia division and in September of that year was promoted to transitman at Altoona, Pa. He was promoted to assistant supervisor in the office of the general superintendent at Altoona in January, 1904, and in September of the following year, was transferred to the Pittsburgh division. Mr. Garrigues was transferred to the Maryland division in September, 1908, and in December of the same year was promoted to supervisor of the Alleghany division. In November, 1912, he was appointed supervisor of the West Jersey & Seashore, a part of the Pennsylvania system, and in June, 1914, was transferred with the same title to the office of the general manager. On January 1, 1915, he was appointed engineer in the valuation department. In May, 1917, Mr. Garrigues was again appointed supervisor of the Baltimore division, holding this position until September of the same year when he was transferred to the Philadelphia division. In December, 1917, he was promoted to division engineer of the Trenton division, being transferred in January, 1919, to the Philadelphia terminal division. He was promoted to engineer maintenance of way of the Southern division in March, 1920, and in May of the same year was promoted to superintendent of the Delaware division. He was transferred to the Atlantic division in April, 1922, and in May, 1923, to the Philadelphia terminal division, which position he was holding at the time of his recent promotion to general superintendent of the Illinois division, with headquarters at Chicago.

Traffic

J. H. McCaffrey has been appointed commercial agent for the Atlantic Coast Line, with headquarters at New York.

R. A. Belding has been appointed industrial agent of the Wabash, with headquarters at St. Louis, Mo., succeeding J. S. Walsh, Jr., who has resigned.

C. A. Barber, assistant to general passenger agent of the Lehigh Valley with headquarters at New York, has been promoted to assistant general passenger agent, with the same headquarters.

J. E. Kenworthy has been appointed general passenger agent of the Georgia & Florida, with headquarters at Augusta, Ga. **D. W. Agnew** has been appointed general western agent, with headquarters at Detroit, Mich.

J. S. Henney, assistant general freight agent of the Clover Leaf district of the New York, Chicago & St. Louis, with headquarters at St. Louis, Mo., has been promoted to general freight agent, with headquarters at Toledo, Ohio. **J. T. Smith,** commercial agent at St. Louis, Mo., has been promoted to assistant general freight agent, with the same headquarters, succeeding Mr. Henney.

Charles A. Forrest, general agent of the St. Louis-San Francisco with headquarters at San Francisco, Cal., has been promoted to executive general agent at Birmingham, Ala. Mr. Forrest was born on October 5, 1871, at Auburn, N. Y., and was educated in the public schools of that city. He entered railway service in 1889 as a clerk and stenographer to the superintendent of the Pacific Express at Dallas, Tex. The following year he became a rate clerk in the office of the general freight agent of the Texas & Pacific and resigned the following year to work for a law firm. In 1894 he became chief clerk in the legal department of the Missouri-Kansas-Texas of Texas at Dallas. In 1896 he was appointed secretary of the company and, in 1897, contracting freight agent. Two years later he was promoted to commercial agent. In 1901-1902 he served as a salesman for a coal company and for a brief period in the latter year was official court reporter for the M-K-T. He then became traveling freight agent of the Choctaw, Oklahoma & Gulf and served that company and its successors, the Rock Island and the Frisco, being appointed commercial agent of the latter in 1910. In 1913 he was appointed general agent at Atlanta, Ga. In 1918 he served for a brief period as division freight agent and as general freight agent of the Birmingham Belt at Birmingham, Ala. Then until 1920 he served as a specialist in transportation for the U. S. Department of Agriculture at Atlanta. He then returned to the Frisco as general agent at Atlanta and since has served in the same capacity at Dallas and San Francisco.

Mechanical

J. H. Douglas, master car builder of the Wheeling & Lake Erie, with headquarters at Brewster, Ohio, has been trans-

ferred to Toledo, Ohio, with office in the Iron street shop yards.

M. King has been appointed road foreman of engines of the Coast division of the Southern Pacific, with headquarters at San Francisco, Cal., succeeding H. L. Moore who has been assigned to other duties.

F. P. Howell, shop superintendent of the Atlantic Coast Line with headquarters at Waycross, Ga., has been appointed superintendent of motive power, with the same headquarters, succeeding J. E. Brogdon, deceased. **C. A. White,** master mechanic with headquarters at Waycross, has been appointed shop superintendent with the same headquarters, succeeding Mr. Howell. **S. E. Porter,** general foreman with headquarters at Port Tampa, Fla., has been appointed master mechanic with headquarters at Waycross, succeeding Mr. White. **C. S. Taylor,** master mechanic with headquarters at Wilmington, N. C., has been appointed shop superintendent of the Emerson shops with headquarters at Rocky Mount, N. C. **J. H. Painter,** shop superintendent with headquarters at Rocky Mount, N. C., has been appointed master mechanic of the Richmond, Norfolk and Fayetteville districts, with the same headquarters. **P. J. Meade,** master mechanic with headquarters at Rocky Mount, has been transferred to the Wilmington district, with headquarters at Wilmington.

Engineering, Maintenance of Way and Signaling

W. H. Hulsizer, assistant to the valuation officer of the Union Pacific, with headquarters at Omaha, Neb., has been promoted to valuation engineer, with the same headquarters.

C. M. Barbour, assistant engineer in the office of the electrical engineer of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to assistant engineer in the office of the chief engineer of the lines in Texas and Louisiana, with headquarters at Houston, Tex.

Purchasing and Stores

H. A. Smith, general storekeeper of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo., has been promoted to purchasing agent and general storekeeper, with the same headquarters, succeeding W. G. O'Fallon, who has resigned to engage in private business.

Obituary

Everett M. Alvord, assistant to the director general of railroads and director of the Division of Liquidation Claims of the United States Railroad Administration, died at his residence at Washington, D. C., on November 1 after a brief illness. Mr. Alvord had had an unusually extensive experience on western railroads and had been connected with the Railroad Administration since 1918, when he became inspector of transportation in the Division of Operation. During 1919 and 1920 he was a member of the committee on compensation and claims of the Railroad Administration and after the return of the railroads by the government he was appointed assistant to the director general and director of the Division of Liquidation Claims, in which capacity he had been in general charge of the settlements between the railroads and the government of the accounts arising from the period of federal control. Mr. Alvord was born July 2, 1859, at Olney, Ill., and, after attending the common schools, entered railway service in 1875 as a telegraph operator on the Ohio & Mississippi. He was later agent and operator on the Texas & Pacific, dispatcher on the Denison & Pacific, clerk and dispatcher for the Pacific Improvement Company; general material agent, International Improvement Company; trainmaster and general roadmaster of the Fort Worth & Denver City, and from 1888 to 1891, purchasing agent of the International Great Northern. From 1891 to 1893 he was general superintendent of the East Line & Red River; from 1893 to 1895 general superintendent of the Sherman, Shreveport & Southern; from 1895 to 1903 superintendent of the Missouri, Kansas & Texas, and from 1903 to 1911 general superintendent of the same road. From 1911 to 1913 he was vice-president and general manager of the Midland Valley and after having spent four years in private enterprises he became general superintendent of the Pittsburgh & West Virginia, which position he held in 1917 and 1918.

E. M. Alvord

E. O. McCormick, vice-president of the Southern Pacific, with headquarters at San Francisco, Cal., died in that city on November 1. Mr. McCormick was born at Lafayette, Ind., on April 3, 1858, and entered railway service in 1879 as a timekeeper in the construction department of the Lake Erie & Western. He was later employed in the freight department of the Louisville, New Albany & Chicago at Lafayette, Ind., after which he was appointed general agent for the Great Eastern Freight Lines at Louisville, Ky. He was later appointed city passenger and ticket agent for the Chicago, Indianapolis & Louisville at Louisville, Ky., subsequently being transferred to Chicago. Mr. McCormick was then successively promoted to general northwestern passenger agent at Chicago, and general passenger and ticket agent with the same headquarters. In May, 1889, he was appointed general passenger and ticket agent for the Cincinnati, Hamilton & Dayton, holding this position until September 1, 1893, when he was appointed passenger traffic manager of the Cleveland, Cincinnati, Chicago & St. Louis. Mr. McCormick entered the service of the Southern Pacific in May, 1899, as passenger traffic manager, being promoted on April 1, 1904 to assistant traffic director of the Southern Pacific and the Union Pacific systems. On May 1, 1910, he was elected vice-president of the Southern Pacific and held this position until the period of Federal control, when he was sent to England and France on a labor mission. On his return he went to Alaska to make a survey of the government railroad at the request of the Department of the Interior. On March 1, 1920, at the conclusion of Federal control, Mr. McCormick was elected vice-president in charge of promotion and development of the Southern Pacific, which position he held at the time of his death.

E. O. McCormick

B. J. Dalton, former chief valuation commissioner of the Missouri, Kansas & Texas, died at Parsons, Kan., on October 28.

G. W. Andrews, assistant to the chief engineer, maintenance of way, of the Baltimore & Ohio, with headquarters at Baltimore, Md., died on November 2.

Col. Augustus Pope, special statistician for the Southeastern Freight Association and the Southern Freight Association, died at Montgomery, Ala., on October 18.

THE GREAT NORTHERN expects to have moved approximately 16,000,000 tons of ore at the end of the year.